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The Speaking Cognitions and Attention Scale: An Empirically-Derived Measure of Public Speaking Anxiety

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DISSERTATION APPROVAL

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Although public speaking anxiety is one of the most commonly reported causes of both clinical and non-clinical anxiety, many of the currently used questionnaire measures of public speaking anxiety do not reflect the advances made in recent decades regarding empirical methods of test construction, including item generation and determination of subscale composition. The current study administered 35 empirically-generated cognitive self-statement items related to speaking anxiety to a sample of 367 undergraduate students along with measures of public speaking anxiety, fear of negative evaluation, generalized social anxiety behaviors, and self-consciousness tendencies. Using exploratory factor analysis and item-total correlations, participant responses to the 35 self-statement items were examined, producing the 30-item Speaking Cognitions and Attention Scale (SCAS). Data indicated that in the current sample the SCAS displayed a three-factor solution, with factors composed of items reflecting positive self-statements, negative self-statements, and catastrophic self-statements. The scale also demonstrated excellent internal reliability, with alphas in the range of .90 to .97. Discriminant validity analyses supported the specificity of the measure in measuring public speaking anxiety by correlating highly with another measure of speaking anxiety, at a moderate level with measures of general social anxiety, and at a small level with a measure of self-consciousness with no theoretical relationship to speaking anxiety. Results are discussed

with respect to implications of the current findings for questionnaire measurement of public speaking anxiety, needed future directions in further validation of the measure, and potential applications for treatment of public speaking anxiety.

DEDICATION

I dedicate this work to my parents, Kent and Donna Beck, who raised me in a home that respected independence and valued learning and intelligence. Without this foundation, I would not have been able to pursue, let alone attain, this goal. I thank them for the values they instilled in me and I hope to reflect them not only in this work, but also in all of my future endeavors.

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CHAPTER 1

Introduction

Social performance situations, such as meeting a stranger for the first time or speaking before a group of people, arouse subjective experiences of anxiety in many individuals. The National Comorbidity Survey, a large scale epidemiological survey focusing on mental health issues, found that 38.6% of the sample reported experiencing some sort of social fear; of that number, 34.5% met criteria for a *DSM-III-R* diagnosis of social phobia, a disorder in which social fears cause clinically significant distress and behavioral avoidance (Kessler, Stein, & Berglund, 1998). Hofmann and Barlow (2004) note that social phobia is the most common anxiety disorder and the third most common mental health complaint in the general population. Social and performance anxiety can be aroused by a variety of social situations, with wide variation between sufferers in regards to which scenarios are most distressing. One of the most consistently reported anxiety-producing situations is public speaking, which can arouse strong anxious responding even in individuals who experience little or no anxiety in other social interactions (Pollard & Henderson, 1988). A randomized survey of 499 subjects about public speaking fears found that one-third of respondents reported being "much more nervous than other people" while speaking to an audience (Stein, Walker, & Forde, 1996), a figure which closely matches the 30.2% lifetime prevalence rate of public speaking anxiety reported by the National Comorbidity Survey (Kessler, Stein, & Berglund, 1998).

Public speaking anxiety is classified by the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition* (DSM-IV; American Psychiatric Association, 1994) as a type of specific social phobia. Specific social phobias are distinguished from generalized

social phobia by considering the pervasiveness of the situation that arouses the anxious responses. Individuals with generalized social phobia will experience cognitive and physiological indicators of anxiety and exhibit behavioral avoidance tendencies in response to a broad spectrum of social interaction and performance situations, while individuals with specific social phobia will display this pattern only in a narrow subset of social situations and function without marked distress in all others. Public speaking anxiety, therefore, has been commonly operationalized (Kessler, Stein, & Berglund, 1998) as the regular experience of extreme discomfort during, or avoidance of, social performance situations in which the individual is the subject of scrutiny by multiple others who are primarily passive observers or evaluators rather than active interactional participants.

This general construct has also been studied intensively by speech communication researchers, who conceptualize it under a general class of behavioral phenomena labeled communication apprehension. McCroskey (1977) defines communication apprehension as "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (p. 78). Considered as such, this definition overlaps with the one offered above by empirical psychology in identifying cognitively-experienced anxiety as the cause of social difficulties, but differs in identifying more broadly defined concerns about communication as the sole source of this anxiety, rather than also incorporating differences related to situational aspects. However, McCroskey (1977) does acknowledge variation in experiences of communication apprehension, particularly the existence of specifically public-speaking focused apprehension, and researchers investigating communication apprehension (e.g.

Beatty & Behnke, 1991; Boohar & Seiler, 1982; Burgoon & LePoire, 1993; Greene & Sparks, 1983) have been diligent in operationalizing the contexts in which they have chosen to examine the construct. Therefore, enough points of comparison exist between the psychological and communication constructions that research in either field can be considered informative to the theoretical foundations of the other. The current review will seek primarily to consider communication apprehension findings within the context of the psychological literature on public speaking and social anxiety in general.

Although public speaking anxiety is common, it can carry insidious consequences. As noted above, moderate or severe levels of social and performance anxiety are typically accompanied by attempts to avoid the feared social situation (Hofmann & Barlow, 2004; Rapee & Heimberg, 1997). When the focus of anxiety is public speaking, such avoidance tendencies can be significant barriers to educational and occupational attainment, as speeches and public presentations have become increasingly common elements of college curricula and many middle-class occupations. Rodebaugh and Chambless (2004) provide a prototypical example in discussing the treatment of a speech-anxious client whose symptoms were causing him to avoid pursuing a graduate education because of the likelihood that he would be required to make public presentations.

Empirical evidence indicates that this state of affairs is far from uncommon for those who suffer from public speaking anxiety. Among speech-anxious respondents to the survey conducted by Stein, Walker, and Forde (1996), 17% reported that their speech anxiety had an adverse effect on their educational, occupational, or social functioning. A review by McCroskey (1977) on the educational effects of communication apprehension

notes that students reporting high levels of communication apprehension frequently report lower grade point averages and scores on standardized testing, suggesting that communication fears may constitute a significant impediment to learning while in school. Supporting this assertion, Boohar and Seiler (1982) found that students in an undergraduate bioethics course who scored highly on a measure of communication apprehension received lower grades on exams and term papers and were less likely to consult with the instructor during available office hours. The authors posited that apprehension or anxiety about verbal communication, along with reducing learning, may cause instructors to take a more negative view of a student's motivation to achieve or master the material. When one considers such findings in the light of the high prevalence of public speaking anxiety, it becomes clear that its deleterious effects can reach far beyond the experience at the podium.

Fortunately, public speaking anxiety is a condition that has proven to be highly amenable to explanation and treatment. As a form of specific social anxiety (American Psychiatric Association, 1994), public speaking anxiety can be understood using current explanatory theoretical models of social phobia (e.g. Clark & Wells, 1995; Rapee & Heimberg, 1997), which emphasize the interaction between internal cognitive factors and overt behavioral elements in creating and sustaining the anxious response. These cognitive-behavioral models, designed to prevent a flexible description of anxiety processes, are thought to generalize even to instances of subclinical anxiety (Rapee & Heimberg, 1997). Accompanying these advances in theoretical formulation, social anxiety treatment has become both more effective and more efficient (Bitran & Barlow, 2004; Hofmann & Barlow, 2004; Rodebaugh & Chambless, 2004). Short-term treatment

that focuses on cognitively-based interpretations and controlled behavioral exposure to feared situations now represents the gold standard for treatment of social and performance anxiety (Bitran & Barlow, 2004), even supplanting pharmacotherapy, which may actively interfere with the extinction of the behavioral response (Birk, 2004).

Despite the substantial gains discussed above, there is still room for improvement in the theoretical and clinical literature on public speaking anxiety. In large part, such improvements will take the form of refining the existing theoretical framework and treatment to better incorporate specific idiographic features that differentiate between the various subtypes of social and performance anxiety. A key first step toward accomplishing this is the formulation of measures specifically targeted towards assessing such subtypes using empirically derived and externally valid methods. The development of reliable and valid measures of specific subtypes of social anxiety that possess strong discriminant and construct validity will allow for more targeted assessment and will consequently open the door to more focused and individualized treatment.

The current research aims to develop and validate a self-report measure specifically designed to assess public speaking anxiety. Existing measures of public speaking anxiety (e.g. Hofmann & DiBartolo, 2000; Paul, 1966) suffer from limitations that result from not having been developed using empirical methods of item generation or not having been specifically developed to measure anxiety about public speaking. The current study attempts to avoid these faults by employing an empirically-based and naturalistic method of item generation known as the thought-listing method (Cacioppo, Glass, & Merluzzi, 1979; Cacioppo, von Hippel, & Ernst, 1997) in which scale items are distilled from actual thoughts experienced by speech-anxious individuals engaged in a

public speaking task. Another shortcoming of existing self-report assessments of public speaking anxiety is that most assess only the positive or negative emotional experiences (hereafter referred to using the term "affective valence") associated with public speaking. However, a growing body of empirical and theoretical work examining the effects of focusing attention toward the self or toward other people during a social encounter (e.g. Clark & Wells, 1995; Rapee & Lim, 1992; Stopa & Clark, 1993; Woody, 1996; Woody & Rodriguez, 2000) suggests that assessing affective valence alone without considering focus of attention might provide an incomplete picture of speaking anxiety. The public speaking anxiety measure to be developed and validated by this study will address this by explicitly including an attentional focus component. The ultimate goal of the current study is to use empirical methods to validate a self-report measure of public speaking anxiety that is grounded in the current empirical and theoretical literature on the subject and to obtain preliminary psychometric data on the reliability, validity, and factor structure of this measure.

Understanding Public Speaking Anxiety

The Contribution of Cognitive Theory

Over the past several decades, cognitive theory has maintained a position of widespread influence in conceptualizations of maladaptive or distressing mental conditions, including anxiety (e.g. Beck & Clark, 1997; Beck, Emery, & Greenberg, 1985; Bruch, Mattia, Heimberg, & Holt, 1993; Heimberg, Dodge, Hope, Kennedy, Zollo & Becker, 1990). According to Beck (1976), the central innovation of cognitive theory is the idea that thoughts and thought processes exert a great degree of influence over behaviors and emotions. By extension, distressing or maladaptive behaviors and emotions

can be linked to specific thoughts. Cognitive therapy seeks to alleviate mental distress by changing or reinterpreting such thoughts (Beck, 1976).

Of particular importance in cognitive theory are "automatic thoughts," or emotion-eliciting thoughts that occur outside of the individual's conscious control. Beck (1976) describes automatic thoughts as interpretations of events which are regarded as plausible or likely by the individual but are actually not based in fact. In many cases, automatic thoughts take the form of a statement regarding the individual's ability to cope effectively with the situation at hand and the implications of success or failure in doing so (Beck, 1976). These self-relevant automatic thoughts are commonly referred to as self-statements (Beck, Emery, & Greenberg, 1985; Clark & Wells, 1995).

With regard to the anxiety disorders, cognitive theory theorizes that specific self-statements and other automatic thoughts cause the individual to feel that he or she is in some sort of danger (Beck, Emery, & Greenberg, 1985; Ingram & Kendall, 1987), which in turn activates the constellation of physiological and affective arousal reactions that comprise the anxiety response (Beck & Clark, 1997). Research into self-statements has therefore been of particular interest to investigators seeking to provide empirical support for this model. Since social anxiety research has consistently found that highly socially anxious individuals under-rate their social performance relative to observer ratings (Alden & Wallace, 1995; Rapee & Lim, 1992; Rodebaugh & Rapee, 2005; Stopa & Clark, 1993; Wallace & Alden, 1991), most research into the role of self-statements in social anxiety has focused on the hypothesis that negative statements about one's social self-efficacy perpetuate socially anxious responding.

Harrell, Chambless, and Calhoun (1981) examined the correlational relationship between self-statements and affect by presenting undergraduate participants with a series of hypothetical situations involving interpersonal conflict, such as being criticized or rejected by another person. After reading each situation, the participants were instructed to rate a series of prototypical self-statements designed to express anger, anxiety, suspicion, depression, or rational responding, in terms of how likely they would be to express that self-statement in response to the situation. Additionally, participants were provided with a list of five affective states that reflected the same categories of anger, anxiety, suspiciousness, depression, and rationality. The results of the study indicated that, as hypothesized, the specific self-statements were highly correlated with their corresponding affective states. Additionally, individuals who rated the anxious self-statements as being more characteristic of them received higher scores on the Fear of Negative Evaluation Scale and the Social Avoidance and Distress Scale (Watson & Friend, 1969), both of which are measures of social anxiety. Finally, the self-statements designated as "rational" by the researchers exhibited an inverse association with the affective states designated as "maladaptive" (anger, anxiety, suspiciousness, and depression). Despite the methodological shortcomings resulting from the study being correlational in nature and not employing any behavioral measures, these results are consistent with the cognitive model's claims (Beck, 1976; Ingram & Kendall, 1987) that self-statements and affective states relate closely to one another.

Hope, Rapee, Heimberg, and Dombeck (1990) utilized a more experimentally-based approach to the study of negative self-statements in social anxiety. These researchers modified the classic Stroop color naming task using words as stimuli. The

stimulus words were chosen to reflect social anxiety-related themes of failure and inadequacy or panic disorder-related themes of physical illness and somatic dysregulation. Emotionally neutral words were also included as controls. A sample of socially phobic and panic-disordered individuals were exposed to these words and asked to identify the color of the ink that each was written in. Consistent with hypotheses, results indicated that socially phobic individuals exhibited greater response latencies on social threat words than for physical threat words or neutral words; while panic-disordered individuals exhibited greater response latencies when physical threat words were presented as compared to the other two categories. This pattern of results suggests that socially-phobic individuals may process information in a manner that is biased toward social stimuli which carry negative or threatening connotations, which is consistent with the predictions of cognitive theory (Beck, Emery, & Greenberg, 1985).

Mahone, Bruch, and Heimberg (1993) conducted a study in which undergraduate men engaged in a brief interaction with a female confederate. As the subjects awaited the interaction, they were asked to make separate listings of thoughts they were having about themselves (self-statements) and thoughts they were having about their interaction partner. Subjects also provided ratings of their subjective feelings of anxiety and their self-efficacy in regards to making a favorable impression on their interaction partner. Results indicated that the percentage of reported negative self-statements was inversely related to social self-efficacy and positively related to subjective anxiety during the interaction. Percentage of negative self-statements was also a significant predictor of scores on the Social Avoidance and Distress Scale (Watson & Friend, 1969). The results of this study provide more empirical support for the cognitive model's assertion that

negative self-statements in social situations are a key component of social anxiety (Beck, 1976; Beck, Emery, & Greenberg, 1985).

In a replication and expansion of Mahone, Bruch, & Heimberg's (1993) study, Beazley, Glass, Chambless, & Arnkoff (2001) measured self-statements in social phobics across three different types of social situations. Participants reported self-statements in connection with an interaction with a partner of the same sex, an interaction with an opposite-sex partner, and a public speaking situation. Results indicated that the situation exhibited a significant effect on the associated pattern of cognitions, particularly when the interaction situations were compared to the public speaking situation. Social phobics reported more negative thoughts and fewer positive thoughts in the public speaking situation than in the interaction scenarios. Additionally, negative self-statements were found to correlate highly with participant self-ratings of poor social skill and observer ratings of higher anxiety and poorer social skill. Based on these findings, the authors recommend that more attention be paid to the effects of specific social situations on eliciting anxiety, and recommended that a wider variety of behavioral situations be employed to study generalized social phobia experimentally.

A critical prediction of cognitive theory is that anxiety problems can be successfully treated by changing their associated negative self-statements (Beck, 1976; Beck, Emery, & Greenberg, 1985). Chambless, Tran, and Glass (1997) examined predictors of response to a group-based cognitive-behavioral treatment for social phobia. After completing a course of this treatment, participants completed a variety of questionnaire-based measures along with behavioral tasks such as giving a public speech and interacting with an experimental confederate. Results indicated that cognitive

changes involving decreased negative thinking during social behavior were associated with decreases in self-reported anxiety in both public speaking and dyadic interactions immediately after the end of treatment. However, the research hypothesis that cognitive changes would predict maintenance of treatment gains at a 6 month follow-up evaluation was not supported, lending only mixed support to the predictions of cognitive theory.

Ayers (1988), approaching the problem of speaking anxiety from a communication apprehension framework, also noted correlational evidence linking public speaking anxiety to negative expectations before giving a speech and negative evaluations afterwards. He applied these findings to an experimental paradigm in which half of a population of students enrolled in an undergraduate public speaking class were trained in the use of a visualization technique involving a combination of relaxation, imaginal exposure and positive thinking to prepare for a speech. In comparison to a control group of students that did not receive training in this method, speakers using this technique reported less anxiety while speaking and a greater proportion of self-reported positive thoughts during the speaking task. These findings appear to support the assertion of cognitive theory that interventions targeted toward increasing positive thoughts about public speaking can yield measurable reductions in anxiety.

In another experimental investigation of cognitive change, Heimberg, Dodge, Hope, Kennedy, Zollo, and Becker (1990) compared two varieties of group treatment for social phobia. The first of these was grounded in cognitive theory and taught subjects to identify, analyze, and challenge their social anxiety-related automatic thoughts, while emphasizing the need for practicing these skills in real-life social situations. The second group, which served as a control, was psychoeducational in nature and focused on

providing definitions and demonstrations of social phobia concepts, as well as supportive group discussions. All subjects participated in a simulated social scenario, which was personalized for each individual in order to increase the likelihood that it would be anxiety-provoking, after the conclusion of the treatment and at 3- and 6- month follow-up. Subjects were assessed on a variety of measures of anxiety, including a self-report listing measure of self-statements experienced during the task.

Data analysis indicated that the group receiving the cognitive treatment exhibited greater reductions in self-reported and observer-rated anxiety in comparison to the control treatment, and that these gains were more likely to be preserved throughout the follow-up period. Furthermore, the patients in the cognitive condition showed greater change in reported negative and positive self-statements between pretest and follow-up, indicating that the observed gains were likely related to changes in patterns of cognition. A five-year follow-up study (Heimberg, Salzman, Hope, & Blendell, 1993) with the same sample found that the cognitive condition participants continued to display and report less anxiety than their counterparts in the control cohort. By demonstrating via a controlled study that cognitive changes appear to lead to changes in anxiety, this data provides further support for the cognitive theory of anxiety (Beck, Emery, & Greenberg, 1985; Ingram & Kendall, 1987) and its efficacy in predicting and altering socially anxious responding.

A Theoretical Account of Behavioral Regulation

The previously reviewed research suggests that the cognitive model lends a valid and important perspective on social anxiety. The basic claims of the cognitive model, most notably the importance of cognitions and subjective interpretations in determining

behavioral responses, have had wide influence in the theoretical and empirical literature on social anxiety (e.g. Clark & Wells, 1995; Glass, Merluzzi, Biever, & Larsen, 1982; Ingram & Kendall, 1987; Rapee & Heimberg, 1997; Rapee & Lim, 1992; Stopa & Clark, 1993), as well as in other areas. One formulation which has been profoundly influenced by the cognitive model is self-regulation theory (Carver & Scheier, 1981; 1998), a general model of behavior that forms the basis for the explanatory model of social anxiety (Clark & Wells, 1995) upon which this study is based.

As described by Carver and Scheier (1998), self-regulation theory is designed to function as a high-level explanatory framework for motivated behavior. The theory is particularly adept at generating complex conceptualizations which account for the interactions of a variety of cognitive, behavioral, environmental, and attentional features in determining the course of behavior. As such, the theory is intentionally broad and can be flexibly applied to a wide variety of specific behaviors across different contexts. Despite the high degree of flexibility and abstraction, the core features of self-regulation theory discussed below form a stable basis for a coherent model of motivated behavior.

Standards of behavior. Self-regulation theory postulates that all motivated behavior is an attempt to meet some sort of standard of comparison against which that behavior can be judged. Carver & Scheier (1998) term this standard the "reference value", and note that this value is highly subjective. That is, reference values for a particular behavior will vary depending on the context in which the behavior is performed, the idiographic characteristics of the individual performing the behavior, and the degree to which performance feedback is available. However, all reference values serve the same basic function: providing an active standard against which the individual

regulates his or her behavior. As such, self-regulation theory proposes that the various elements involved in behavior regulation exist to ensure that the performed behavior measures up to the corresponding active reference value. Self-regulation theory's emphasis on the power of idiosyncratic and subjectively held values to influence behavioral responses is highly congruent with cognitive theory's own claims about the relationship between subjective cognitive interpretations and behavior (Beck, 1976; Ingram & Kendall, 1987).

Wallace and Alden (1991) investigated the influence of standards on social anxiety with an experimental paradigm that required controls and socially anxious participants to converse with an opposite-sex stranger. Prior to this task, subjects were asked to provide ratings of three standards of social performance relevant to the interaction: their personal standard for satisfaction, their perception of the experimenter's standard, and their estimate of the average standard of performance that would be attained by others on the task. Subjects also gave a rating of the level of performance that they expected to achieve in the interaction. Results indicated that the non-anxious subjects set their personal standards at roughly the same level as their perception of the experimenter's standards, and generally expected that they would meet or exceed all three standards of performance. By contrast, the anxious subjects reported personal standards that were lower than their perception of the experimenter's standards, and rated their abilities as being unable to match the latter standard. This pattern of results indicates that the discrepancy between socially anxious individuals' perception of their own abilities and their perception of the standards of others may play a key role in differentiating them from non-anxious individuals.

Carver, Lawrence, and Scheier (1999) utilized a different approach to study the influence of subjective standards on affective experiences. These authors outlined three different types of self-perceptions to participants: the "ought-self," defined as characteristics that the individual feels that he or she should possess because of moral or social standards, the "ideal self", defined as characteristics that the individual would like to possess, and the "feared self", defined as characteristics that the individual would like to avoid possessing. For each description, study participants were asked to list seven of their own traits which they felt to be reflective of that variety of self-perception. Participants then provided ratings indicating how well they felt each trait currently described them. The same participants were subsequently administered the Affects Balance Scale (Derogatis, 1975), a measure in which they were presented with a series of adjectives describing a variety of emotions and asked to rate the extent to which they had experienced each in the previous week. Results indicated that the extent to which participants viewed themselves as conforming or not conforming to specific self-perceptions exhibited an effect on their affective experiences. Individuals who reported that they were relatively near their "feared self" also reported high levels of anxiety, guilt, and depression, and lower levels of happiness and contentment. Individuals who reported larger discrepancies between their current self and their "ideal self" similarly reported more feelings of depression and fewer feelings of happiness and contentment. An interaction effect was found for feelings of anxiety and guilt in which discrepancies between current self and "ought self" predicted these affective states when the individual did not report being close to his or her "feared self," but did not predict them when the individual did make such a report.

The authors interpreted this last finding as an indication that the activation of different reference values creates different motivations for experiences of anxiety and guilt. The researchers theorize that when proximity to the "feared self" is salient, the affective reaction serves to motivate the individual to distance him or herself from that state; by contrast, when the "feared self" is not salient, then the individual is more likely to experience anxiety and guilt as a means of motivating him or herself to reduce perceived discrepancies between the current self-perception and the "ought self" (Carver, Lawrence & Scheier, 1999). These findings and their interpretations by the authors are consistent with self-regulation theory's proposal that subjectively held standards against which individuals evaluate themselves are a crucial variable in the understanding of emotion and behavior (Carver & Scheier, 1981; Carver & Scheier, 1998).

The speech communication literature parallels the psychological studies above in investigating the role of prevailing standards in communication apprehension. Greene and Sparks (1983) conducted a study in which groups of undergraduate students were asked to record an audiotape of themselves arguing their opinion on a provided topic. Half of the participants were informed that the quality of their arguments would be evaluated by trained judges, while the other half were told the arguments were simply a means to keep them engaged in speech while the experimenters measured their physiological responses to speaking and that the content of their tapes would be immediately erased. Results indicated that participants who scored highly on a measure of communication apprehension reported significantly more anxiety in the first, more evaluative situation than in the second, while participants who received low communication apprehension scores reported no differences in anxiety between the two

conditions. Greene and Sparks (1983) interpreted these results as indicating that the effects of communication apprehension vary with the extent to which the situation is perceived as evaluative.

An investigation by Beatty (1988) into the situational correlates of communication apprehension found additional evidence to support the importance of evaluative standards. The results of a correlational study conducted with undergraduate subjects indicated that public speaking anxiety was positively predicted by the extent to which the speakers felt that they were dissimilar or subordinate to the audience. Furthermore, subjects who scored highly on a measure of communication apprehension were significantly more likely to report both feeling subordinate or inferior to the audience and being more conspicuously scrutinized by the audience. In interpreting this latter finding, the author emphasizes the interaction between the trait-like predisposition toward communication apprehension and the tendency to impute threatening or judgmental characteristics to audiences; an observation which corresponds well to the predictions of Carver and Scheier (1981).

Importance of feedback. In order to evaluate whether or not a behavior is congruent with the current reference value, current measures of performance must be taken. One of the most critical tenets of self-regulation theory is that motivation and behavior are subject to constant revision based on new information, which is constantly being received from a variety of sources. The dynamic nature of self-regulation models leads to great emphasis being placed on feedback processes. Feedback provides a value for current performance that can then be compared to the reference value to yield information about whether or not behavioral adjustment is needed. The most commonly

employed feedback mechanism to explain behavior in self-regulation models is negative feedback. Negative feedback occurs when a discrepancy exists between the reference value and information about performance received through feedback channels. When such a discrepancy is detected, behavior changes in an attempt to reduce or eliminate this discrepancy and return performance to the level of the reference value (Carver & Scheier, 1998).

Rodebaugh and Rapee (2005) conducted an experiment in which both socially anxious and non-anxious individuals gave two short videotaped speeches. In between the first speech and the second one, participants in the experimental condition rated how well they believed they performed on the previous speech, and then re-rated their performance after watching the videotape of that speech. Participants in the control condition also rated their first speech twice, performing a filler task between ratings. For each participant, a discrepancy score was calculated in which the participant's first rating of his or her performance was compared to the average rating of two trained observers. Analysis of the data revealed an interaction effect in which participants in the experimental condition who displayed a markedly negative evaluation of their performance relative to the raters evaluated their performance on the first speech more positively after viewing the video. The finding that individuals who are biased towards evaluating their public speaking performance negatively are more likely to re-evaluate themselves after receiving objective feedback suggests that the nature of the feedback being provided can display a concrete effect on self-perception and behavior, which is highly consistent with the claims of self-regulation theory regarding the importance of feedback (Carver & Scheier, 1981).

Wald (2005) utilized a similar public speaking paradigm in which participants gave two videotaped speeches before an audience. However, rather than utilizing the tape of the speech performance itself, the experimenters provided participants with feedback that was ostensibly from the audience but was actually standardized to provide similar information using different framing (wording). The feedback types were as follows: positive other-focused, which made explicit reference to the audience in noting a supposed positive attribute of the speech; positive self-focused, which referred to the participant's actions and noted a supposed positive attribute of the speech; lack of negative other-focused, which also made explicit reference to the audience and noted a supposed avoidance of a negative behavior during the speech; and lack of negative self-focused, which referred only to the participants actions in noting a supposed avoidance of a negative attribute. The author also employed a control condition in which no feedback was provided. Results indicated that the presence of feedback in any form was associated with better predicted performance in the second speech relative to the control participants. Additionally, a differential effect for the feedback frames was noted, in which over all conditions, self-focused positive feedback was associated with the greatest amount of experienced anxiety in the second speech and positive other-focused feedback was associated with the least amount. These findings provide more evidence in support of the influence of feedback on behavior as per self-regulation theory.

Goals. Goals constitute one of the most common sources of reference values for behavior. Self-regulation theory holds that all behaviors are essentially attempts to either achieve a desired outcome or avoid an undesired outcome. Goals represent the individual's explicit identification of what should be accomplished by a particular

behavior. The relationship between goals and behavior can be complex; goals are often nested within extensive hierarchies, with high-order, abstract goals (such as "be a good person") subsuming lower-order, more concrete goals (such as "do not deceive your significant other"). The hierarchical organization of goals in such a manner suggests that the operating reference value in a behavior regulation loop may change in accordance with changes in the current importance of different goals. If, for example, the situation activates a lower-order goal in the hierarchy, such as "do not deceive your significant other", the resulting regulation of behavior against this standard will take a markedly different form than if a higher-order goal is activated, such as "be a good person," despite the fact that both goals are in the same hierarchy (Carver & Scheier, 1998).

Empirical research tends to support the importance of goals in behavior regulation as it relates to social anxiety, although findings have indicated that perceived efficacy in achieving goals tends to be a stronger predictor of anxious behavior than the goals themselves. In their study of standard setting in social interactions, Wallace and Alden (1991) noted that anxious participants did not differ from non-anxious individuals in ratings of their personal standards of performance for the interaction, but did rate themselves as being less efficacious in achieving these goals. Kocovski and Endler (2000) administered a battery of measures assessing social anxiety, goal-directed behavior, and related constructs to university undergraduates. Results indicated that individuals reporting greater social anxiety also reported lower expectations of goal achievement. Although this data is correlational in nature and therefore limited by the inability to infer a causal relationship between the variables, the authors hypothesized that socially anxious individuals may develop lower expectations of goal achievement as

a defense mechanism against anxiety associated with perceptions that they are likely to fail to achieve their goals.

Affect. Self-regulation theories also recognize that many behaviors are accompanied by emotional experiences. The affective component that accompanies goal-directed behavior can often be quite strong, particularly in situations that are likely to arouse anxiety. Carver and Scheier (1998) theorize that emotion is linked to a separate but related higher-level function in the self-regulation system that monitors the individual's progress in reducing discrepancies between current behavioral output and the active reference value. In terms of this conceptualization, the critical concern is the effectiveness of the self-regulation system as expressed by the rate of discrepancy reduction. Affective experiences constitute a feedback channel providing this information, with the rate of discrepancy reduction being compared to a value representing the expected or ideal rate of reduction. When the current rate of reduction is less than expected or when the discrepancy is perceived to be widening, negative affect results. When the progress in reducing discrepancy is greater than expected, the affective experience is positive. In situations where the perceived rate of progress matches the expected rate, no emotional experience is predicted. Carver and Scheier (1998) emphasize that affect is tied to progress or regress in the process of goal attainment, not the actual attainment of goals.

Carver (2006) extends this conceptualization of the role of affect in self-regulation in a new direction by postulating the existence of two distinct broadly-defined types of affect-behavior relationships. These are, respectively, affects linked to approaching desired goals and affects linked to avoiding undesired goals. Notably, both

varieties are conceptualized as bipolar dimensions, with the potential to produce either positive or negative emotion. For instance, approach-related affects could be negative if goals are not being achieved, and avoidance-related affects could be positive if attempts to avoid undesirable outcomes are met with success. Carver (2004) found empirical support for this theory using scales designed to assess both approach and avoidance tendencies. Despite the fact that the items designed to measure approach tendencies contained no reference to negative affect or threat, it was found that experimentally manipulated situations designed to produce negative emotional experiences of sadness, frustration, and anger through thwarting of goal-directed behavior were positively related to approach tendencies. Negative emotional experiences of anxiety and fear produced by situations in which participants were exposed to undesirable outcomes were positively related to avoidance tendencies. Both results are consistent with the theorized existence of two independent bipolar dimensions of affect, linked to approach and avoidance tendencies.

Focus of Attention in Behavioral Self-Regulation and Social Anxiety

Perhaps the most relevant contribution of self-regulation theory (Carver & Scheier, 1981; 1998) toward understanding socially anxious behavior is the heavy emphasis on the behavioral effects of focus of attention. Since self-regulation theory postulates that behavior is greatly affected by the context in which it takes place, attentional factors are incorporated into several facets of the theory to explain how some features of the environment become more relevant to a particular behavior than others. Self-regulation models distinguish between goals which are essentially private and those that are essentially public (Carver & Scheier, 1998). Private goals deal mainly with

internal phenomena such as thoughts, desires, and self-related motivations, while public goals are typically more concerned with issues of self-presentation in social situations. Whether public or private goals are focused upon as the reference value for a particular behavior depends on the situational context. Focusing on private goals tends to amplify awareness of personally held values, while activation of public goals causes the individual to conceptualize himself or herself as the object of others' perceptions. As with any variation in reference values, activation of private versus public goals by a particular situation changes the subsequent process of behavioral regulation. For instance, social interactions and the anticipation of social interactions seem to cause public goals to be activated, resulting in the adoption of a reference value that represents the expectations, as the individual perceives them, of others in the social environment. The individual will then evaluate the effectiveness of his or her subsequent behavior in the situation against these norms, with the intent of minimizing discrepancies (Carver & Scheier, 1998).

Focusing attention on the self as compared to focusing on the environment seems to be of particular importance in determining whether public or private goals are activated in a given situation (Carver & Scheier, 1981). In particular, self-regulation theory predicts that focusing attention toward the self increases the likelihood that public goals such as self-presentation will be adopted as the reference value for the subsequent behavior, with a corresponding tendency to engage in social comparison. Additionally, self-focus is thought to cause the individual to become more sensitive to feedback that indicates discrepancies with the social standards that serve as reference values, leading to increased attempts at behavioral regulation and more vigilant monitoring of feedback cues to determine the effectiveness of regulation. Experimental evidence has generally

supported these assertions. Scheier and Carver (1983) demonstrated this tendency by subjecting participants to a task in which they copied geometric figures from a reference drawing. Participants performing the task under a situational manipulation designed to increase self-focused attention looked at the reference figure more often than those in a control condition. Subjects who scored highly on a measure of dispositional tendencies toward self-consciousness similarly consulted the reference figure more often than subjects with lower scores on the same measure.

The ability of self-focused attention to engage social comparison in individuals has become an area of great interest in the empirical study of social anxiety processes (e.g. Mahone, Bruch, & Heimberg, 1993; Melchior & Cheek, 1990; Monfries & Kafer, 1994; Pilkonis, 1977; Woody, 1996; Woody & Rodriguez, 2000). Consistent with the predictions of self-regulation theory, self-focused attention has been repeatedly associated with increased social anxiety. A meta-analysis by Mor and Winquist (2002) encompassing 226 effect sizes found that self-focus was broadly related to negative affect and that self-focus on public goals was strongly related to social anxiety. Moreover, the analysis indicated that self-focus on private goals (rumination), although strongly associated with measures of depression, was only weakly related with social anxiety, supporting the notion that the relationship between public self-focus and social anxiety possesses some measure of specificity.

Several correlational studies have measured the relationship between social anxiety and self-consciousness, defined as a dispositional tendency to focus on the self (Turner, Scheier, Carver, & Ickes, 1978). Pilkonis (1977) administered the Self-Consciousness Scale (SCS; Fenigstein, Scheier, & Buss, 1975), along with a battery of

measures of personality and social anxiety, to a sample of university undergraduates. He found that measures of general shyness, social anxiety, and self-monitoring were positively correlated with public self-consciousness. Additionally, individuals who reported a greater concern with public aspects of shyness, such as awkwardness and performance deficits, reported greater difficulty in coping with social anxiety than individuals who primarily reported concern with private aspects of shyness, such as subjective discomfort. Turner, Scheier, Carver, and Ickes (1978) provide additional support by replicating Pilkonis's (1977) correlations between public self-consciousness and measures of social anxiety and self-monitoring.

Monfries & Kafer (1994) conducted a study correlating self-consciousness with a scale designed to measure fear of negative evaluation (Watson & Friend, 1969), a construct which has been widely linked to social anxiety both empirically and theoretically (e.g. Beck, Emery, & Greenberg, 1985; Clark & Wells, 1995; Rapee & Lim, 1992; Rapee & Heimberg, 1997; Stopa & Clark, 1993) and a scale designed to measure more behavioral tendencies toward social anxiety (Watson & Friend, 1969). Results indicated that public self-consciousness correlated positively with both measures, providing additional support for the involvement of this construct in social anxiety. Interestingly, private self-consciousness was found to correlate positively with fear of negative evaluation but was unrelated to socially anxious behavior. The authors suggest that this latter finding indicates that self-consciousness over private aspects of social interaction may activate cognitively-based correlates of social anxiety, such as fears of criticism, while allowing the individual to avoid the behavioral features of social anxiety that are associated with greater difficulties in social situations. These findings and

subsequent interpretation are highly congruent with those reported by Pilkonis (1977) and Turner, Scheier, Carver, and Ickes (1978).

A variety of experimental and quasi-experimental studies also support the association between self-focused attention and socially anxious behavior. Melchior and Cheek (1990) subjected shy and non-shy female participants to a five minute interaction with a stranger. After the interaction, participants provided an estimate of how much (in percentage) of the conversation period they spent focusing on themselves as compared to focusing on their partner. Participants also rated both themselves and their partners on self-consciousness, awkwardness, inhibition, confidence, and relaxedness during the interaction and completed a questionnaire measure of socially anxious thoughts. Subjects who reported spending a greater percentage of the interaction self-focusing also reported more shyness and shyness-related feelings during the interaction and scored more highly on the measure of socially anxious thoughts. Additionally, when a shy and non-shy individual were paired with one another, the shy individuals tended to over-rate their shyness relative to their partner's rating of them, and both individuals tended to rate the shy individual as exerting less influence on the direction of the conversation. Again, this pattern of results is highly consistent with the theorized connection between self-focused attention and socially anxious behavior.

In another experimental study of attentional focus in social situations, Woody (1996) employed a unique paradigm which allowed for manipulation of attentional focus. Socially phobic individuals were asked to give two extemporaneous speeches in front of an audience. The participants completed the task in pairs, with one participant speaking and the other standing passively beside the speaker. In both speeches, the speaker was

instructed to speak about the cognitive, emotional, and physical experience of standing before an audience, however, the focus of the speech shifted between trials. In one trial, the speaker described his or her own experience; in the other, the speaker described the experience of his or her passive partner. The change in speech focus, which served as the independent variable, was intended to manipulate focus of attention. Results indicated that when the content of the speech was focused on the passive participants, they reported anticipating and experiencing more anxiety and were rated by observers as appearing more anxious. Similarly, the speakers reported more anticipatory anxiety and were rated as appearing more anxious by observers when the speech content was focused on them. However, focus of attention was not found to affect either self-reported or audience rated measures of social performance, such as social skill or quality of the speech. By demonstrating that manipulating focus of attention can produce corresponding changes in subjective anxiety, Woody's (1996) study provides an important measure of support for the connection between self-focus and social anxiety.

In an extension of Woody's (1996) research paradigm, Woody and Rodriguez (2000) instructed participants with social phobia and non-phobic controls to give two extemporaneous speeches before a small audience. The task was again completed in pairs, with one speaker and one passive participant. As in the prior study, focus of attention was manipulated by changing the target of the speech content between the speaker and the passive participant. Analysis of the results again revealed that participants in both roles reported significantly greater anxiety when the content of the speech was focused on them. Observer ratings confirmed that participants also appeared more nervous in these conditions. Interestingly, the anxiety-increasing effect of self-

focused attention occurred in both normal controls and socially phobic individuals, suggesting that the relationship between attentional focus and anxiety response is not particular to the highly anxious. The latter interpretation led the authors to theorize that more pathological forms of social anxiety may be linked to greater individual tendencies toward self-focus.

Woody, Chambless, and Glass (1997) employed a sample of individuals undergoing treatment for social phobia to investigate potential effects on self-focused attention. Results indicated that participant tendencies to self-focus decreased significantly over the course of the treatment, while tendencies to focus attention on external factors remained stable. Using a variety of behavioral measures administered both pre and post-treatment, which included dyadic interactions and public speaking, the authors found that decreases in reported anxiety on these measures corresponded with decreased self-focus. This effect was particularly pronounced among individuals with public speaking phobias, who reported greater improvements in their speaking anxiety with reductions in self-focus. These results provide more empirical support for the role of self-focus in social anxiety, along with indications that lessening self-focus yields tangible reductions in anxiety and may constitute an important target for treatment.

In another empirical study of the role of self-focused attention in social anxiety, Pineles and Mineka (2005) compared the responses of socially anxious participants to non-anxious participants on a dot-probe task designed to measure reaction time to various stimuli. In order to measure attention toward physiological cues, participants were asked to wear a finger plethysmograph and told that a static visual representation of their current heart rate would appear periodically on the screen alongside a similar visual

representation of the sound of a horse neighing. The authors utilized this manipulation with the rationale that attending to internal cues such as physiological indicators of anxiety constitutes a variety of self-focus, as has been suggested by several cognitive-behavioral models of social anxiety (e.g. Clark & Wells, 1995; Rapee & Heimberg, 1997). Results indicated a significant effect for the socially anxious individuals preferentially attending to the stimuli that ostensibly represented their heart rate. This finding is consistent with Woody and Rodriguez's (2000) hypothesis that socially-anxious individuals may have a dispositional tendency toward greater self-focus, particularly because a significant difference between socially anxious and non-anxious individuals emerged in the Pineles and Mineka (2005) study despite the fact that the experimental task did not involve a social situation.

In addition to the variety of research findings supporting the role of self-focused attention on social anxiety, empirical studies have also examined the ways in which attention directed towards others can promote anxiety in social situations. In their study of heterosocial anxiety, Mahone, Bruch, and Heimberg (1993) collected two separate thought-listing protocols from the undergraduate men that comprised their sample. One of these protocols instructed the participants to list thoughts they had about themselves during the interaction, while the other requested a list of thoughts about the interaction partner. Each list of thoughts was rated for affective valence (positive, negative, or neutral) by trained raters. Trained raters also viewed a videotape of each interaction in order to evaluate each subject for behavioral indicators of social anxiety as defined by a standardized protocol. Analyses indicated that positive thoughts about the interaction partner were a significant predictor of independently-rated behavioral indicators of social

anxiety. This relationship remained significant even after statistically controlling for variance associated with the participants' negative and positive self-thoughts. The authors interpret this result by reasoning that focusing attention on the positive qualities of the partner might increase the reference value for success in the interaction to a level that a socially anxious individual might feel less capable of matching. Although the causal claim made by this interpretation requires controlled experimental study for validation, the implication that increasing the salience of other-related standards of performance may promote socially anxious behavior is consistent with much of the research on the importance of reference values in social anxiety (e.g. Carver, Lawrence, & Scheier, 1999; Wallace & Alden, 1991).

A Self-Regulation Model of Social and Performance Anxiety

As reviewed above, the theoretical account of behavioral regulation presented by self-regulation models (Carver & Scheier, 1981; 1998) displays a high degree of fit with existing research on social anxiety, as do the broader principles of cognitive theory (Beck, 1976; Beck, Emery, & Greenberg, 1985). This state of affairs provides an ideal groundwork for a specific model of social anxiety that incorporates the substantial contributions of both theories. Indeed, several such models have been proposed (Clark & Wells, 1995; Ingram & Kendall, 1987; Rapee & Heimberg, 1997), all of which generally conform to the broad framework outlined by cognitive and self-regulation theory, differentiating themselves from one another largely by the specific elements of the theories which they choose to emphasize. Of these, the model authored by Clark and Wells (1995) forms the foundation for the current study's treatment of public speaking anxiety. In addition to emphasizing the influence of cognitive factors in determining

reference values and interpreting performance feedback, this particular model offers a detailed elucidation of the effects of attention on anxiety and social performance. The key aspects of this model, how they are thought to interact with one another to account for the experience of social anxiety, and empirical support for these claims are summarized below.

Favorable self-presentation as a reference value. Clark and Wells' (1995) model postulates that highly socially anxious individuals adopt a reference value that places a high priority on impression management in social situations. In many cases, these reference values are unrealistically high and can be expressed by statements such as "I must give a flawless speech" or "Any mistakes are unacceptable." Such reference values are thought to set a standard for performance that drastically increases the amount of pressure on the anxious individual as he or she confronts a social situation and effectively constitute a predisposition to a negative discrepancy between performance feedback and reference value.

Noting the important role of high standards in many theoretical models of social anxiety, including Clark and Wells (1995), Alden, Bieling, and Wallace (1994) conducted an investigation into the role of perfectionism in social anxiety. Echoing the distinction between public and private goals outlined by self-regulation theory (Carver & Scheier, 1998), these researchers specified two varieties of perfectionism; socially prescribed, in which high standards are set by external expectations, and self-oriented, in which standards are set by the individual. In order to define the relationship between these varieties of perfectionism and socially anxious behavior, the researchers subjected socially anxious, mildly depressed, and control subjects to a brief interaction task with an

opposite-sex partner. These subjects subsequently completed measures of perfectionism and reported various aspects of their experience during the interaction, including standards for self and perceived other's standards.

Results indicated that socially anxious subjects displayed a pattern of higher socially prescribed perfectionism and lower social self-efficacy. In comparison with the control and mildly depressed subjects, the socially anxious subjects exhibited a larger discrepancy between social self-efficacy and perceived other's standards. This pattern of results is consistent with the predictions of Clark and Wells' (1995) model of social anxiety, which emphasizes the function of discrepancies between standards and perceived ability to meet these standards in producing anxious responses. Of particular importance is the study's specification of public standards as the key focus of anxiety, which coheres with Clark and Wells' (1995) focus on impression management as the central goal of the self-regulation process as well as the previously reviewed body of empirical research linking public self-consciousness and other-focused behavioral standards to social anxiety (Pilkonis, 1977; Turner, Scheier, Carver, & Ickes; 1978; Wallace & Alden, 1991).

Alden, Bieling, and Wallace's (1994) research supports Clark and Wells' (1995) model of social anxiety on several levels. First, it provides an empirical quantification of the hypothesized comparison between standards and reference values, producing results that closely match the model's predictions (Clark & Wells, 1995). Next, the observation that socially anxious individuals seem to differ from the non-anxious in their interpretation of the feasibility of meeting standards rather than the objective magnitude of the standards themselves provide yet another source of support for Clark and Wells'

(1995) assertion that subjective biases are of paramount importance in conceptualizing social anxiety.

Negative assumptions. Clark and Wells (1995) hypothesize that individuals who experience high levels of anxiety are distinguished by particular assumptions regarding their behavior in social situations. Specifically, such individuals may typically believe that they are at risk of behaving in a manner that will be deemed socially unacceptable by others and that this behavior will result in highly undesirable consequences. These beliefs, in combination with a reference value that places a strong emphasis on conveying a favorable impression when interacting with others, should further increase the likelihood that an unfavorable discrepancy will be perceived during a social situation, leading to negative affect and a persistent experience of anxiety. Indeed, many highly anxious individuals report a great deal of anxiety even when anticipating a social encounter that is relatively far in the future, indicating that these individuals actively anticipate an unfavorable discrepancy based on little more than their assumptions and expectations and further expect that this event will have pronounced negative consequences.

This aspect of the Clark and Wells (1995) model of social anxiety suggests that in comparison to non-anxious or less-anxious individuals, highly anxious individuals will feel more threatened by the possibility that others may evaluate them negatively. Empirical research has largely indicated that this is the case. Much of this research has employed the Fear of Negative Evaluation Scale (FNE; Watson & Friend, 1969), a measure of cognitively-based fears of the disapproval of others. Stopa and Clark (1993) administered the FNE to socially anxious individuals, non-anxious controls, and

individuals with non-socially focused anxiety disorders following an experimental interaction task. Of the three groups, socially anxious individuals reported the most negative evaluation fears, consistent with what would be expected based on Clark and Wells (1995). However, the authors also noted that the non-socially anxious group scored more highly on the measure than did the non-anxious controls, suggesting that the scale measures some features of anxious pathology which are not entirely unique to social anxiety.

Rapee and Lim (1992) conducted a study in which socially phobic individuals and non-phobic controls gave an impromptu speech before a small audience of raters, who evaluated each subject's performance and appearance of anxiety using a variety of global and specific criteria. Participants also provided ratings of their own speech performance and anxiety experience. Consistent with other research (Savitsky & Gilovich, 2003; Stopa & Clark, 1993), results indicated that participants with social phobia exhibited a significant tendency to under-rate their own performance in comparison to the ratings of others. The authors found that scores on the FNE were the only significant predictor of this self-other discrepancy, further supporting the notion that expectations of negative evaluation constitute a key determinant of social anxiety.

In an investigation of the effects of communication apprehension in classroom settings, Booth-Butterfield (1989) conducted an experiment in which high and low-apprehensive undergraduate students were asked to imagine that they had recently given a classroom speech for which they had prepared "reasonably well" and instructed to complete a standardized performance feedback form to reflect how they believed their instructor would evaluate them on such a speech, as well as providing an open-ended

interpretation of what that feedback would signify about their performance. Results indicated that both high and low-communication apprehensive individuals appeared to generate their evaluations using similar criteria (e.g. content, quality of delivery, amount of personal warmth), suggesting that communication apprehension did not fundamentally alter the categories that students perceived to be the components of an effective speech. However, high-apprehensive students estimated that they would be evaluated more negatively than did their low apprehensive peers on the delivery and performance aspects of the task, and endorsed more negative attributions in regards to the effectiveness of their speaking. Interestingly, results also indicated that high-apprehensive individuals evaluated themselves more positively on factors relating to speech content, an unexpected finding that led the researcher to hypothesize that high-apprehensive individuals may habitually put more effort into preparing the content of speeches in order to compensate for their perceived difficulties in delivery factors.

In conjunction with the assertion that socially anxious individuals are more concerned with being negatively evaluated by others, Clark and Wells' (1995) model also theorizes that such individuals are more inclined to view their own social performance in a negative light. Stopa and Clark (1993) evaluated the self-reported cognitions of socially anxious individuals, non-anxious controls, and individuals with non socially-related anxiety disorders following a social interaction task. Relative to the other two groups, socially anxious subjects were significantly more likely to report having negative thoughts about their own performance on the task. Cacioppo, Glass, and Merluzzi (1979) performed a similar experiment in which socially anxious and non-anxious undergraduate males were asked to list their thoughts while awaiting a brief interaction with a female.

The socially anxious participants listed significantly more negative thoughts regarding their anticipated performance. Furthermore, independent judges rated the reported thoughts of the anxious participants as significantly different from those of the non-anxious participants, suggesting that socially anxious functioning is characterized by distinctive patterns of cognition.

Other empirical studies have also broadly supported Clark and Wells' (1995) conceptualization of socially anxious individuals holding lower expectations of their own social performance abilities. The previously discussed findings of Rapee and Lim (1992) that anxious individuals were more likely than controls to under-rate their performance relative to the ratings of the objective observers indicates that in addition to greater fears of negative evaluation, the socially anxious may tend to believe that performance deficiencies in social situations will cause these fears to be realized. Stopa and Clark (1993) observed a similar result, in which socially phobic participants were more strongly negative than third-party observers in rating their social performance. In their study of self-focused attention, Woody and Rodriguez (2000) found that socially phobic individuals rated their performances as less skillful than did participants in a non-phobic comparison group; however, objective raters in this case did not differ significantly from the self-ratings of the social phobics. Rather, a self-other discrepancy was observed in the non-phobic controls; the objective raters evaluated this group's performance significantly lower than self-ratings, suggesting a potential bias toward overestimation of performance efficacy in "normal" individuals.

Although individuals with social phobia have been described in the literature as displaying social performance deficits (i.e. Alden & Wallace, 1995; Stopa & Clark,

1993), the fact that the highly anxious often view themselves even more negatively than objective observers serves to highlight the operation of significant negative biases. Furthermore, the widely reported existence of this discrepancy in the highly anxious indicates that a biased perspective on one's performance can drastically affect how a social encounter is approached. These observations, coupled with the previously reviewed research regarding the functioning of negative self-statements in social anxiety (Harrell, Chambless, & Calhoun, 1981; Heimberg, Dodge, Hope, Kennedy, Zollo, & Becker, 1990; Hope, Rapee, Heimberg, & Dombeck, 1990; Mahone, Bruch, & Heimberg, 1993), fit well with the framework outlined by Clark and Wells (1995), which theorizes that negative performance expectations serve to accentuate the disparity between reference values and social performance as currently perceived.

Self-focused attention. Consistent with the literature reviewed previously (Mahone, Bruch, & Heimberg, 1993; Melchior & Cheek, 1990; Monfries & Kafer, 1994; Pilkonis, 1977; Woody, 1996; Woody & Rodriguez, 2000), Clark and Wells' (1995) model of social anxiety outlines a central role for self-focused attention in provoking anxious responding. Specifically, the model hypothesizes that once highly anxious individuals enter a social situation in which a risk of negative evaluation is perceived, they focus a large proportion of their attentional resources on themselves. Clark and Wells (1995) theorize that self-focus serves to create an internal, cognitively-based estimation of the individual's current social performance as seen by others in the situation, roughly equivalent to Carver and Scheier's (1981) conceptualization of public self-consciousness. This mental image is thought to function as the primary source of performance feedback to be comparison with the active reference value. Since this

conceptualization of the social self is heavily influenced by the individual's pre-existing beliefs about his or her efficacy in social situations, highly anxious individuals, who tend to express lower social self-efficacy (Stopa & Clark, 1993; Wallace & Alden, 1991), will be more likely to perceive an unfavorable discrepancy from the outset of the social encounter.

This hypothesized mechanism for the relationship between self-focused attention and social anxiety finds some empirical support in Alden, Bieling, and Wallace's (1994) study of the influence of perfectionistic thinking in social anxiety. Their results indicated that frequency of self-appraisal during the interaction task was the most significant predictor of the socially prescribed perfectionism that constitutes a key component of social anxiety. Since the process of self-appraisal involves both self-focus and comparison processes, the construct seems to be a reasonable approximation of Clark and Wells' (1995) description of a social comparison process that becomes increasingly engaged with self-focus. Therefore, the finding that self-appraisal is associated with social anxiety seems quite consistent with this aspect of the Clark and Wells (1995) model.

Safety behaviors. Clark and Wells (1995) also theorize that behavioral aspects play a significant role in the course of social anxiety related self-regulation. Anxious individuals are thought to engage in specific preventative defensive behaviors that are inhibitory in nature, to attempt to guard against negative evaluation. The hypothesized function of these "safety behaviors" is to prevent the individual from doing something that he or she thinks is very likely to result in a negative evaluation, such as stammering or turning red. Although safety behaviors are a form of anxiety regulation, Clark and

Wells (1995) note that they are frequently counterproductive in actually reducing or eliminating social or performance anxiety. Primarily, this is because the individual's belief in the efficacy of safety behaviors in minimizing negative evaluation is thought to prevent the individual from receiving feedback indicating that the feared event is actually not as negatively evaluated by others as previously assumed. Another problem arises when increased vigilance toward the feared outcomes that the safety behaviors attempt to guard against causes those behaviors to become more likely to occur due to enhanced sensitivity. Clark and Wells (1995) note that this latter situation is particularly common when dealing with physiological processes such as trembling or blushing.

In an investigation of the effects of safety behaviors in interpersonal functioning, Alden and Bieling (1998) subjected socially anxious and non-anxious undergraduate women to a social interaction task with an experimental confederate. Prior to the interaction, each participant was given one of two instructional briefings; which suggested that the participant was likely to be positively appraised or negatively appraised, respectively, by the interaction partner. Subjects rated their own performance and anxiety during the interaction and completed measures reflecting their social goals and level of physiological arousal. In addition, the participants were rated by the interaction partner on the dimensions of likeability and appropriateness of responses during the interaction, and participant responses were timed for length and rated for level of intimacy by trained judges.

Results indicated that the socially anxious individuals in the negative appraisal condition were significantly more likely to speak briefly and select low-intimacy topics of conversation than socially anxious individuals in the positive appraisal condition,

despite the fact that no significant differences in physiological arousal were found between the two socially anxious groups. The observed situational variance of the use of low self-disclosure and brief response strategies by socially anxious individuals indicates that they were utilized as safety behaviors to guard against negative evaluation, consistent with the characterization of Clark and Wells (1995). Additionally, the researchers found that socially anxious subjects in the negative appraisal condition who engaged in the aforementioned safety behaviors were rated as less likable by partners than socially anxious subjects in the positive appraisal condition who did not. This latter finding could not be accounted for by levels of anxiety, which did not vary between conditions for the anxious subjects, suggesting that the behaviors themselves caused the negative evaluations. This interpretation provides an important measure of empirical support for Clark and Wells' (1995) claims for the counter productiveness of safety behaviors in preventing others' negative evaluations in social situations.

Voncken, Alden, and Bögels (2006) conducted a novel investigation of the consequences of engaging in safety behaviors by presenting subjects with a series of vignettes in which a character experiences anxiety in a social situation and asking them to rate how well that character would be perceived by the interaction partner in that situation and how they would be perceived were they to behave as the character did in that situation. Three different versions of the vignette were presented: one in which the character acknowledges his or her anxiety, one in which the character engages in safety behaviors to conceal his or her anxiety, and one in which the character neither acknowledges nor conceals his or her anxiety. Participants indicated that engaging in safety behaviors to conceal social anxiety would likely result in more negative outcomes

than either acknowledging or not responding to anxiety. This prediction was made by participants who scored highly on a measure of social anxiety as well as those who did not, indicating that the socially anxious may be as aware of the negative consequences of safety behaviors than those who do not suffer from social anxiety. However, in line with research suggesting that socially anxious individuals expect disproportionately negative outcomes for themselves in social situations (Rapee & Lim, 1992; Stopa & Clark, 1993; Wallace & Alden, 1991), the socially anxious participants in the study estimated that they would be perceived more negatively for engaging in the safety behaviors described in the vignette as compared to their estimations of how the character would be perceived, while non-socially anxious individuals did not.

Working from a communication studies perspective, Burgoon and LePoire (1993) examined the influence of expectancies and behavior on perceptions of conversation partners by asking undergraduate participates to interact with a confederate who had been instructed to engage in nonverbal behaviors denoting either a warm and open or a restless and disengaged manner. Prior to the interaction, the experimenters induced positive or negative expectancies in the participants by presenting them with a list of personal attribute ratings ostensibly completed by the confederate indicating either positive traits such as maturity and responsibility or negative traits such as arrogance and self-centeredness, and augmenting this with a verbal statement that based on recent observations, the confederate should be either difficult or easy to work with. Results indicated a strong main effect for communication type, whereby the open and warm communicators were judged as being more positive, effective, and rewarding than the closed and disengaged communicators. The negative effect of the closed style of

nonverbal communication persisted even in instances when positive expectancies were induced beforehand, leading the researchers to conclude that observed communication behaviors can result in evaluations by others that run counter to previously held expectations. Although this research did not directly measure social anxiety or communication apprehension elements at the construct level, the "negative" nonverbal behaviors employed by the researchers are strikingly reminiscent of some of the safety behaviors described by Clark and Wells (1995), and the findings regarding the unfavorable effects of this style reinforce the contention that behavioral correlates of social anxiety increase the likelihood of undesirable evaluations by others.

Daly, Vangelisti, and Weber (1995) conducted an empirical investigation into the speech preparation strategies of anxious individuals compared to their non-anxious counterparts. Hypothesizing that speech anxiety exerts a detrimental effect on the preparation elements of public speaking, the author instructed undergraduate participants to plan an impromptu speech by verbalizing their speaking strategy into a recorder in a "think-aloud" manner during the preparation period. The participants then delivered their speech to an audience of trained raters. The recordings of their preparations were analyzed by trained raters and their verbal content was divided into distinct units reflecting previously identified aspects of preparation such as presentation concerns, speech organization, phrasing, expressions of nervousness, and others. Results indicated that higher scores on a self-report measure of speaking anxiety predicted lower performance ratings on the speech itself. Furthermore, increases in speaking anxiety predicted less time devoted to planning critical presentation factors, such as adapting the speech to the audience and planning to fully utilize equipment such as visual aids and

more time devoted to coming up with information to include in the speech and worrying about capabilities as a speaker. The researchers note that all of the responses associated with speaking anxiety are likely to diminish one's capacity to be an effective presenter, and theorize that they are the main contributors to the observed lower performance ratings associated with public speaking anxiety. The conclusion that speech anxiety influences sufferers to focus less on preparing and executing effective presentation strategies and more on self-doubts and specific content concerns is highly compatible with Clark and Wells' (1995) conceptualization of safety behavior, and indicates that avoiding preparations to relate more directly to the audience may be a safety behavior that is unique to public speaking anxiety.

Attentional biases in external feedback. Clark and Wells (1995) state that as the dominant standard for comparison against the reference value, the mental image of the social self is subject to revision over the course of the social encounter. As per the dynamic nature of self-regulation, these feedback channels can take a variety of forms, including internal experiences and external signifiers produced by other individuals in the encounter. Clark and Wells (1995) theorize that for socially anxious individuals, the feedback process is impacted by the negative biases and tendencies toward self-focused attention that are commonly observed in anxious functioning. First, self-focused attention causes the socially anxious to be far less vigilant to external feedback in general, due to the finite amount of attentional resources available at any given time. Secondly, the tendency toward negative self-perceptions regarding social performance in such individuals decreases the likelihood that any external feedback that is observed will be interpreted as reflecting a favorable or acceptable performance. This is due largely to the

fact that the majority of feedback cues from others in social situations are nonverbal or otherwise ambiguous, particularly in public speaking scenarios, where the speaker typically receives no verbal feedback for the entire duration of the speaking encounter. As a result, Clark and Wells (1995) theorize that the individual's experiences of these feedback cues are heavily influenced by prevailing negative biases in information processing. These biases are thought to actively maintain the anxiety producing discrepancy between reference values and perceived performance by blocking the availability of positive external feedback, which, if recognized, would reduce both the discrepancy and the associated anxiety.

A meta-analytic study of 172 studies regarding attentional bias in anxiety by Bar-Haim, Lamy, Pergamin, Bakermans-Kranenberg, and van Ijzendoorn (2007) found a significant threat-related bias in anxious subjects that was not present in non-anxious subjects. Interestingly, this bias was exhibited in both conscious and non-conscious processing tasks, indicating that enhanced threat detection in anxious individuals is likely attributable to both automatic processes, such as shifts in attention, and elaborative processes, such as active consideration of multiple factors to determine whether a threat is present. In another interesting result, findings indicated that the magnitude of the threat-related bias was similar across all the varieties of anxiety disorder included in the study, which included such diverse syndromes as generalized anxiety disorder, posttraumatic stress disorder, and simple phobia in addition to social phobia. Also, the threat-related bias was found to be similar between clinically anxious individuals and high-anxious individuals not meeting clinical criteria for an anxiety disorder. The authors theorize that the latter two findings may be indicative of a broad common component to

all the anxiety disorders which involves threat-related attentional biases. This interpretation is consistent with the predictions of cognitive theory (Beck, Emery, & Greenberg, 1985; Beck & Clark, 1997) as well as the specific social anxiety model of Clark and Wells (1995).

Winton, Clark, and Edelmann (1995) conducted a different empirical investigation into attentional biases in the socially anxious by examining whether or not social anxiety leads to an increased ability to detect negative emotion in others. The authors exposed individuals reporting either high or low amounts of negative evaluation fears to a pair of experimental tasks involving identification of negative versus neutral affect on faces presented both pictorially and verbally. After an initial exposure to this task, subjects were told that they may be required to give a short speech in front of an audience as part of their participation. This was done as a means of experimentally manipulating social threat. Following the manipulation, the participants repeated the tasks. Results indicated that the social threat manipulation was not found to be effective in altering task responses in either group of participants. However, it was found that subjects who reported more negative evaluation fears were more accurate than their counterparts in identifying negative affect from the cues presented in the experimental tasks. However, they were found to be less accurate at identifying neutral affect. The authors interpreted this pattern of results as indicating that the increased sensitivity to negative affect may be the result of a general negative response bias in individuals with negative evaluation fears rather than an objective increase in ability to interpret social cues.

Importance of subjective internal experience. As was alluded to in the above discussion of feedback interpretation, the Clark and Wells (1995) model of social anxiety stresses the importance of the idiographic beliefs and perceptions of the anxious individual in determining behavior. In many cases, the anxious individual's perceptions of his or her social self-efficacy and the likelihood and consequences of negative evaluation are grossly exaggerated. Likewise, the tendency of anxious individuals to infer negative evaluations from ambiguous feedback cues during the social situation often has little more than a tenuous basis in objectively verifiable fact. Despite this, the individual's subjective interpretation of the situation remains the crucial concern in determining his or her anxiety responses to a social situation. This idea is reflected in nearly every aspect of the Clark and Wells (1995) model, particularly the designation of the mental image of the social self as the standard of comparison to the reference value. At its core, the central process of comparison outlined in the model is between two subjective and internally-generated values; the reference value and the self-perceived estimate of current performance. Moreover, both of these values are greatly influenced by subjective, intra-individual biases and relatively resistant to disconfirming information from external sources. In the case of highly anxious individuals, such biases skew the self-regulation system to the point where the development of a discrepancy between current estimation of performance and the reference value for performance is virtually assured. The model's authors note that the highly subjective nature of this process is typically not recognized by anxiety sufferers, who often uncritically accept their perceptions due to the strength of their affective experiences during anxiety-provoking social situations.

One of the more intriguing sources of empirical support for the influence of subjective internal experiences in social and performance anxiety can be found in the literature outlining the "illusion of transparency" (Gilovich, Savitsky, & Medvec, 1998). The phrase "illusion of transparency" describes a situation in which an individual believes that his or her internal emotional or cognitive experiences are apparent to observers when in fact these experiences are largely unavailable to others and may exert only a slight effect on their judgment of the individual. This bias is thought to operate when particularly strong internal experiences lead the affected individual to assume that corresponding external indicators exist and are readily perceivable.

Although the illusion of transparency was initially demonstrated on behaviors within the range of normal experience, such as overestimating the ability of others to detect lies, nonverbal expressions of disgust, and concern over unethical behavior (Gilovich, Savitsky, & Medvec, 1998), the paradigm was applied to speaking anxiety by Savitsky and Gilovich (2003), who instructed pairs of participants to give impromptu speeches before an audience. Each participant was asked to provide ratings of how anxious he or she believed to have appeared during the speech and how anxious the other participant appeared. Results indicated that participants rated themselves as having appeared more nervous than their counterpart had rated them as appearing, supporting the operation of an illusion of transparency effect. The authors also demonstrated an intriguing effect whereupon participants who were informed of the effect prior to speaking rated themselves more positively, expected to be rated more positively by observers, and were actually rated more highly by said observers, indicating that the

effects of the illusion of transparency bias in speaking anxiety are amenable to intervention (Savitsky & Gilovich, 2003).

The success of Savitsky and Gilovich (2003) in empirically documenting the operation of an illusion of transparency bias in public speaking anxiety also provides support for the Clark and Wells (1995) social anxiety model. The finding that individuals in a public speaking situation frequently over-estimate how anxious they appear to observers reflects the above mentioned model's assertion that anxious responding is heavily influenced by internal and subjective factors. Furthermore, the illusion of transparency theory's premise that susceptibility is dependent on the intensity of the internal experience matches well with Clark and Wells' (1995) emphasis on the role of self-focus and interoceptive cues in producing socially anxious responding. Although the illusion of transparency is a general tendency and not thought to be specific to anxious populations, the magnitude of the over-estimation and the corresponding behavioral effects will in all likelihood be greater in the highly anxious due to the intense and aversive nature of anxiety experiences. Finally, Savitsky and Gilovich's (2003) demonstration of the positive effects of informing subjects about the illusion of transparency bias before a speech seems to fit coherently with Clark and Wells' (1995) account of the influence of available feedback sources in increasing or decreasing social and performance anxiety.

Further evidence for the importance of subjective interpretations of internal experiences in speaking anxiety comes from an experimental study conducted by Beatty and Behnke (1991). Working from a communication apprehension paradigm, these researchers examined the heart rate responses of both high-apprehensive and low-

apprehensive individuals during two different public speaking tasks. One of these was constructed to be a low-intensity speaking task, in which the participants spoke in front of a single audience member and were informed that their data would be used only for experimental purposes, and the other, in which participants spoke in front of a classroom of 15-20 undergraduates and were informed that their speech would be evaluated by all present and the results forwarded to their public speaking instructors for a course grade, was constructed to be a high-intensity task. Results indicated that during the low-intensity task, the high-apprehensive speakers had significantly higher heart rates than their low-apprehensive counterparts. However, during the high-intensity task, no statistically significant difference in heart rate between high and low-apprehensive speakers was noted, yet the high-apprehensive speakers reported significantly more anxiety than did the low-apprehensives on this task.

Beatty and Behnke (1991) interpreted this aspect of their findings as illustrative of the primacy of non-physiological factors, such as differences in cognitive interpretations of somatic experiences, in promoting speech-anxious responding. In discussing this point, the authors note that effective speakers who enjoy the process of public speaking may also experience increased physiological arousal in the form of enthusiasm or excitement, and suggest that further attention be paid to the more subjective elements that bias speaking experiences in one direction or the other. Their discussion again underscores the importance of identifying and empirically studying the characteristic patterns of experience that differentiate speech-anxious from non-anxious individuals, as well as tacitly acknowledging the role of these elements in measuring and diagnosis speaking anxiety in common settings.

Cognitive Assessment Methods and Social Anxiety Assessment

Capitalizing on advances in the theoretical and empirical literature on social anxiety, assessment techniques have begun moving toward more specific and externally valid methods of empirically measuring social anxiety. As addressed above, modern conceptualizations (e.g. Beck, Emery, & Greenberg, 1985; Clark & Wells, 1995; Ingram & Kendall, 1987; Stopa & Clark, 1993) stress the influence of cognitions and other subjective factors on socially anxious behavior. In order to incorporate these difficult to quantify constructs into standardized assessments, researchers have pioneered a variety of techniques. Of these, research attention has focused especially on a family of methods known alternatively as thought-listing or cognitive self-statement assessment. As described by Cacioppo, von Hippel, and Ernst (1997), thought-listing is a naturalistic method for assessing cognitive structures in which an individual simply makes a list of his or her thoughts while in a specific situation. Glass and Arnkoff (1997) note that measures based on such methods lend the potential advantage of being able to identify specific patterns of cognitions associated with certain disorders or pathologies. The key features of thought-listing methodologies, along with relevant strengths and weaknesses, are discussed below.

Cognitions as surface measures. Self-statements, or thoughts in which individuals evaluate some feature of their self-image or current behavior, are the crucial cognitive feature assessed in thought-listing (Glass & Arnkoff, 1997). Thought-listing methods seek to make the most accurate possible measure of cognitions as they are experienced within the stream of consciousness. Therefore, most thought-listing methods place great emphasis on individuals reporting their thoughts shortly after they are experienced. This

focus on veridical reporting is undergirded by the theory that such surface-level, "in the moment" cognitions, if measured, will exhibit distinct themes or patterns which will allow for distinctions between groups of interest (Clark, 1988). Cacioppo, von Hippel, and Ernst (1997) highlight the fact that the thought-listing technique does not require subjects to be aware of or provide any insight into the motivations or causal mechanisms that underlie their thoughts. The importance of these features is that they give the thought-listing technique a distinctly empirical bent, with a focus on determining whether or not specific and identifiable thoughts or patterns of thoughts are associated with specific and identifiable behaviors.

Methods of thought-sampling. The process of quantifying self-statements, often referred to in the literature as "thought sampling," can take several forms (Clark, 1988; Glass & Arnkoff, 1994; Glass & Arnkoff, 1997; Heimberg, 1994). Of these flavors of cognitive self-statement assessment, the most frequently used are the endorsement and production methods. As described by Glass and Arnkoff (1997), endorsement methods involve presenting subjects with a list of potentially experienced thoughts and asking them to indicate whether each thought was experienced or how often the thought was experienced during the situation of interest. The authors note that such methods are popular because they allow for the creation of assessments that are easy to administer and score while possessing a high degree of structure. Additionally, such structured measures can be used to take a more deliberate and focused approach to the assessment of positively and negatively valenced thoughts, which can result in a more comprehensive picture of the cognitive features associated with the situation of interest. In a review of cognitive assessment measures, Clark (1988) noted that the endorsement-based measures

have the strongest degree of experimental support for their ability to make valid distinctions between groups and their sensitivity to treatment effects. These advantages have made the endorsement approach the most popular for self-statement assessment (Glass & Arnkoff, 1994).

Glass and Arnkoff (1997) also note several disadvantages of endorsement methods. The most crucial of these is the observation that the included statements may or may not reflect the individual's actual thoughts. Should endorsement items fail reflect cognitive products relevant to the individual's experience, the validity of the thought-sampling as a whole will be subsequently compromised (Glass & Arnkoff, 1994). An additional weakness of endorsement measures is the possibility that the structured nature of these assessments may result in increased demand characteristics or reappraisals of thoughts after the fact, both of which represent significant threats to validity (Clark, 1988; Glass & Arnkoff, 1997). Additionally, although the summary scores that are typically produced by assessments that utilize endorsement measures are useful for normative purposes, they may be overly reductionistic in representing the individual's cognitive features as compared to less structured methods.

A second variety of cognitive self-statement assessment involves individuals making a verbal or written self-report of their thoughts. These methods, which are termed production methods (Glass & Arnkoff, 1994), conform fairly closely to the variant of the thought-listing method described by Cacioppo, von Hippel, and Ernst (1997). Production methods enjoy some advantages in comparison to endorsement methods. Foremost among these is the avoidance of potential demand characteristics involved with endorsement methods due to the fact that production methods do not prompt participants

with specific thoughts that may have occurred in the situation (Heimberg, 1994). Cacioppo, von Hippel, and Ernst (1997) also cite the utility of production methods in situations where hypotheses about the relevant cognitive dimensions to be investigated are relatively unformed, necessitating a more exploratory tack for the research. Arnkoff and Glass (1989) report that the thought-listing method in particular has shown a great degree of versatility as a measure of cognitions in social anxiety research, generally displaying excellent inter-rater reliability and good construct validity, while offering a richer vein of information than is usually produced by endorsement measures.

However, the production method also has some notable limitations. The first of these is the possibility that individuals may deliberately misreport their thoughts for social desirability reasons or that biases in processing or memory may influence the process of reporting thoughts, both of which may be difficult to consistently control for in research (Cacioppo, von Hippel, & Ernst, 1997). Additionally, in his review of cognitive assessments, Clark (1988) reported that the ability of production measures to distinguish between high and low-anxious subjects has varied from study to study, suggesting that the validity of such measures may vary depending on factors such as the specific variety of anxiety being assessed and the method of judging employed to rate the collected self-statements. Finally, Glass and Furlong (1990) found that the Social Interaction Self-Statement Test (SISST; Glass, Merluzzi, Biever, & Larsen, 1982), an endorsement measure of social anxiety, displayed stronger correlations with measures of social anxiety-related beliefs, concerns, and behaviors than did a thought-listing measure when both were administered after an interaction task. The authors interpreted this finding as an indication that the unstructured nature of production methods may suffer from power and

specificity issues in comparison to psychometrically sound endorsement measures (Glass & Furlong, 1990).

Situational exposure. One of the key features of cognitive assessment is the emphasis placed on identifying thoughts within the context of the specific situations in which they occur. This focus on specificity can be traced back to the influence of cognitive theory (Beck, 1976; Ingram & Kendall, 1987), which explicitly outlines connections between specific cognitions, contexts, and behaviors. In order to ensure the most valid association between measured cognitions and the behaviors and situations of interest, the majority of social anxiety studies utilizing such measures expose participants to an experimentally-controlled analog of the situation of interest, such as an unstructured conversation (Alden, Bieling, & Wallace, 1994; Glass & Furlong, 1990; Wallace & Alden, 1991) or public speech (Rodebaugh & Rapee, 2005; Savitsky & Gilovich, 2003; Woody, 1996; Woody & Rodriguez, 2000). A prototypical example of this practice is described by Glass, Merluzzi, Biever, and Larsen (1982) in their account of the development of the Social Interaction Self-Statement Test (SISST), a self-statement measure of anxiety during heterosocial (opposite-sex) interaction situations. The items on the SISST were generated by asking undergraduate subjects to imagine themselves in specific heterosocial interaction situations and record thoughts they would likely experience in that situation. After the item generation process, the researchers tested the validity of the resultant measure by giving it to high and low socially anxious subjects following a 3-minute interaction task with an opposite-sex confederate, finding that the SISST was successfully able to discriminate between the two groups.

The use of situational exposure in cognitive self-statement assessment aids researchers in acquiring valid measures of the cognitions of interest (Glass & Arnkoff, 1994). Cacioppo, von Hippel and Ernst (1997) outline several methodological aspects which can serve to broaden the likelihood of maximizing such validity. The most important of these is limiting the amount of time that elapses between the exposure situation and the assessment of thoughts. This reduces the likelihood that memory biases or forgetfulness will cause the recorded thoughts to markedly differ from those that are experienced in the stream of consciousness. A second important concern is attempting to ensure that the experimental situation corresponds to an external situation that is likely to produce anxiety for the subjects. By manipulating certain features of the situation, such as having participants interact with an attractive member of the opposite sex or stressing that a speech will be evaluated by judges, the power of the situations to promote anxiety can be increased, with subsequent benefits for validity (Cacioppo, von Hippel, & Ernst, 1997).

Judging issues. Whether self-statements are collected by production or endorsement methods, it is the task of researchers to designate how these statements are to be evaluated. In many cases, this is done by trained judges, who provide independent ratings according to criteria provided by the researchers. However, within the empirical literature, there has been a great amount of variance observed both in the criteria on which thoughts are rated and the methods used to rate them. To address the latter issue, Tarico, Van Velzen, and Altmaier (1986) compared three commonly used rating methods to evaluate thoughts generated by a public speaking situation: subject self-rating, rating by experts with thoughts presented in the order in which they were originally generated,

and rating by experts with thoughts presented in random order. The researchers found high inter-rater reliability between the three groups and strong predictive validity for all three methods for public speaking anxiety as measured by the Personal Report of Confidence as a Speaker (Paul, 1966). Interpreting these results as suggestive of a general equivalency between methods in terms of validity and reliability, the authors recommended that rating method for evaluation of thoughts be selected by weighing the expenditure of time and resources needed to employ trained raters against the potential that such trained raters might display better judgment in instances where the evaluation criteria require a greater degree of inference.

Valence scoring. The most commonly applied rating criteria in self-statement assessments, particularly in social anxiety research, is the emotional valence of thoughts. Cacioppo, von Hippel, and Ernst (1997) discuss the practice of evaluating listed thoughts for positive or negative emotionality, noting that various methods have been employed to do so, including simple frequency counts and more elaborate indices incorporating ratios. This topic was given a more thorough empirical treatment by Amsel and Fichten (1990), who compared raw-frequency scoring methods on a self-statement assessment to two different ratio scores, one representing the proportion of positive to negative thoughts and the other representing the proportion of positive thoughts to the combined total of positive and negative thoughts. Results indicated that the latter ratio score, known as the States-of-Mind ratio (SOM; Schwartz & Garamoni, 1986), with a slight correction applied in cases in which the subject reports either no positive or negative thoughts, was generally the most suitable statistic, due to this ratio's ability to both accurately represent the data and provide a common metric for comparison across studies. Furthermore,

positive thoughts were more frequently reported than negative thoughts, and that positive and negative thoughts were found to be functionally independent, rather than representing opposite ends of a continuum (Amsel & Ficten, 1990).

This characterization of positive and negative affect as distinct systems mirrors the predictions and observations of self-regulation theorists (Carver & Scheier, 1981; Carver & Scheier, 1998; Carver, 2006). Many social anxiety researchers (e.g. Cacioppo, von Hippel, & Ernst, 1997; Glass & Arnkoff, 1994; Heimberg, 1994) have also conceptualized affect in this manner. Glass and Arnkoff (1994) favorably evaluated the validity of the SOM ratio in assessing self-statements in social phobia, particularly in the areas of representativeness and convergent validity with self-report measures. When these results are taken in concert with the wealth of evidence in the empirical literature connecting negative affect with socially anxious functioning (Rapee & Lim, 1992; Stopa & Clark, 1993; Woody & Rodriguez, 2000), the utility of emotional valence as a focus of self-statement evaluation in social anxiety assessment is quite well supported.

Attentional focus scoring. Despite the wide acceptance of emotional valence as a key metric in evaluating social anxiety-relevant self-statements, investigators (e.g. Cacioppo, von Hippel, & Ernst, 1997; Clark, 1988; Glass & Arnkoff, 1997) have increasingly begun to question whether simply evaluating the positivity or negativity of a self-statement provides an adequate representation of that statement's relationship to socially anxious behavior. As discussed above, theoretical and empirical work has led to a conceptualization of socially anxious behavior that is considerably more nuanced than mere distinction between positive and negative affect. To this end, theorists have

increasingly emphasized the benefits of also evaluating attentional focus in cognitive self-statement assessment.

The role of attention, especially self-focused attention, in socially anxious behavior has been well-documented (Melchior & Cheek, 1990; Pilkonis, 1977; Pineles & Mineka, 2005; Woody, 1996; Woody & Rodriguez, 2000), suggesting that broadening self-statement evaluation criteria to include such information might increase predictive validity. In their investigation of self-statement scoring methods, Amsel and Fichten (1990) evaluated for attentional focus as well as emotional valence, finding that interactions of the two dimensions were endorsed at different frequencies, with self-related positive thoughts being more common than self-related negative thoughts, and other-related negative thoughts being more common than other-related positive thoughts. As a result, the SOM ratio scores when self-statements were grouped by attentional focus were significantly different from when emotional valence was the only criteria employed, revealing that subjects reported significantly more self-related than other-related thoughts. Although the situation employed by Amsel and Fichten (1990) was not specifically designed to measure social anxiety, there is strong support for the idea that adding a focus of attention dimension to self-statement evaluation can capture additional between-group variance useful in assessing social anxiety (Glass & Arnkoff, 1994).

Validity Issues in Cognitive Assessment

While cognitive assessment and thought-listing methods offer a robust strategy for creating empirically-based assessments of group differences, the fundamental intangibility of cognitions necessitates that great care be taken to ensure that validity be preserved. To an even greater degree than with other methods, self-statement measures

are subject to threats to psychometric soundness throughout the formulation process (Glass & Arnkoff, 1994). As such, researchers have taken pains to survey the existing literature on self-statement measures in order to identify relevant concerns and pitfalls to be avoided.

Situational specificity. As previously discussed, Glass and Arnkoff (1994) note that using an anxiety provoking situation to generate self-statements for use as potential item measures can be problematic if the situation does not closely match the context in which the assessment is designed to be employed. This is particularly important in social anxiety assessment, as social situations take a variety of forms, with different features potentially influencing the nature and amount of anxiety experienced. For instance, the self-statements associated with anxiety in a public speaking situation may be qualitatively different from those associated with anxiety in an interaction situation.

In a precursor to the current study, Beck, Marin, Huber, and Rodriguez (2005) used a thought listing measure to collect self-statements about public speaking from a sample of 35 undergraduate participants. In order to ensure that the collected cognitions were as representative as possible to a real-world public speaking scenario, care was taken to reconstruct the prototypical features of public speaking, such as the presence of an audience, expectations of coherence and clarity in the verbal content of the speech, and non-verbal behavioral elements such as having the subject stand and deliver his or her speech while the audience sat passively. Participants in this study were explicitly instructed to treat the speaking scenario as they would a speech in a real-world setting such as a classroom. High correlations were found between participant self-reports of anxiety on the experimental task and scores on the Personal Report of Confidence as a

Speaker Scale (PRCS; Paul, 1966), suggesting that the task successfully elicited anxiety from individuals who generally tend to be speech-anxious.

In their review of current issues in self-statement measures of social and performance anxiety, Glass and Arnkoff (1994) express concerns about several researchers employing the Social Interaction Self-Statement Test (SISST) to evaluate public speaking anxiety-related cognitions, despite the fact that the measure was developed to assess anxiety during interactions with the opposite-sex. The authors caution that the SISST may lack content validity for public speaking anxiety, thereby threatening the strength of results when this measure is used for such purposes. A variety of authors commenting on the use of cognitive measures in social anxiety echo similar concerns (Cacioppo, von Hippel, & Ernst, 1997; Clark, 1988; Heimberg, 1994), recommending that such measures be used only in the specific situation for which they were developed in order to maximize validity. In situations where a well-validated cognitive measure is not available, researchers are encouraged to create and validate one using empirically sound psychometric methods in lieu of substituting a less appropriate test (Clark, 1988).

Criterion-related validity. A second critical concern in creating a cognitive assessment measure of anxiety is ensuring that the items be of sufficient specificity and sensitivity to distinguish between high and low-anxious individuals. Most of the empirical support for self-statement measures in this area comes from the use of contrasted groups, in which the responses of individuals previously known to suffer from social and performance anxiety are contrasted with those of individuals who do not. Glass and Arnkoff (1994) conclude that the literature on contrasted groups using the SISST and

other measures generally supports the ability of self-statement measures to distinguish between socially anxious and non-anxious individuals, particularly with frequency of negative thoughts. The authors note that some problems exist with method variance in terms of self-statement generation and rating, which may be responsible for the conflicting study results regarding the factors that distinguish anxious from non-anxious individuals. Additionally, they observed that current measures have been inconsistent in their ability to distinguish between subtypes of social phobia and that such measures may, in some cases, be confounded with the presence of depressive symptoms. This latter remark lends another indication that self-statement measures of social anxiety processes may greatly benefit from increased specificity through broadening validation samples to include individuals with a variety of pathologies beyond social anxiety and validating measures in connection with a variety of situations, both related and un-related to the construct of interest (Glass & Arnkoff, 1994).

Measure reactivity. Glass and Arnkoff (1994) also consider the possibility that the process of measuring self-statements might damage validity by confounding the subject's experiences of anxiety or self-evaluation. Although reviewed studies indicate that the thought-listing process by itself does not affect subject self-reports of anxiety or estimated performance, reactivity may become a problem when subject responses to the experimental social situation are conspicuously observed, such as when a judge or video camera is present. These elements may increase the individual's sense that he or she is being evaluated, resulting in elevated feelings of self-consciousness. Based on the results of a study that found the presence of a video camera significantly altered subject proportions of positive and negative thoughts on a thought-listing measure and the reports

of other investigators that more surreptitious tactics such as hidden cameras or audio-recording eliminate this effect, Glass and Arnkoff (1994) recommended that researchers be cognizant of the potential for reactivity when planning their investigations.

Sensitivity to change. A final concern in assessing the validity of a cognitive measure of social anxiety is the ability of that measure to detect change. Given that cognitive processes occupy a central role in theoretical conceptualizations of social anxiety (Clark & Wells, 1995; Rapee & Heimberg, 1997; Stopa & Clark, 1993) and that such processes are targeted for change in psychotherapy for these issues (Beck, Emery, & Greenberg, 1985), valid change detection is clearly one of the most important functions of cognitive measures of social anxiety. Heimberg (1994), in a review of empirical studies on the change sensitivity of currently employed measures of social anxiety, noted a relative paucity of data on cognitive self-statement measures. The majority of cited research on endorsement measures of cognitions focused on the ability of the SISST to assess change for pre to post-treatment in social phobics, which has largely been supported. However, Heimberg cautions that all of the reviewed studies either made some change to the measure or employed it in a situation other than the heterosocial interactions that it was designed for, which may compromise validity.

Heimberg (1994) also reviewed studies that measured change using general thought-listing production measures. Although there were again a small number of investigations and substantial method variance in terms of cognition rating, a trend was observed in which negative cognitions in social phobics were significantly reduced post-treatment, and some studies indicated that this effect was greater when cognitive-behavioral treatments were used. Despite these promising initial results, the author

emphasized the limited scope of current studies of the ability of self-statement measures to be sensitive to change and called for greater utilization of production and endorsement cognitive measures in future research before stronger conclusions are able to be drawn. In doing so, he entreats investigators to pay more attention to the role of information processing in devising cognitive assessments, noting that despite a plethora of evidence suggesting that socially anxious individuals display significant preferences for threat-related cues, these and other processing characteristics have not been incorporated into assessments in any meaningful way. Since thought process may be as, or more, important as thought content in terms of being a target for change in social anxiety, such advances in assessment could yield significant improvements in the efficacy of measures to assess change.

The Current Study

The current study addresses a critical gap in social anxiety assessment by using empirical methods to validate a self-statement measure of public speaking anxiety. Currently, the most commonly used measures of public speaking anxiety suffer from a variety of limitations. The majority (i.e. Paul, 1966; Watson & Friend, 1969) have not been developed using empirical methodologies, and thus may contain items with problematic content or poor criterion-related validity. Furthermore, the public speaking anxiety measures that have been developed using empirical methods of self-statement generation have significant problems. One (Hofmann & DiBartolo, 2000) uses self-statement items that were not generated by a public speaking situation, calling the specificity of the measure into question. Another (Cho, Smits, & Telch, 2004) assesses only negative self-statements, which may be limiting when considering findings in the

literature (Alden & Wallace, 1991; Carver, 2006; Stopa & Clark, 1993; Woody, 1996; Woody & Rodriguez, 2000) that point to the potential benefits for considering discriminant validity of assessing positive affect and adding a focus of attention dimension.

In light of this situation, the research line that produced this study has undertaken to develop a measure of public speaking anxiety with items that are derived from self-statements generated by anxious and non-anxious individuals in an experimental public speaking situation. Furthermore, these items have been rated for focus of attention as well as emotional valence, with the expectation that incorporating this dimension will add more power in differentiating high-anxious individuals. Additionally, the measure has been designed for greater sensitivity to speaking anxiety as a dimensional construct by using a five-point scale rather than a dichotomous response format.

Precursors to the Current Study

In attempting to generate a more empirically-derived measure of public speaking anxiety, the current study builds upon previous research conducted specifically to provide the proposed measure with a pool of empirically-generated items. This study and the preceding investigations collectively form a multi-part effort to ensure that scale items reflect the key validity criteria outlined above by Glass and Arnkoff (1994). The methodology of each is briefly summarized below.

Collection of speaking-related cognitions. Beck, Huber, Marin, & Rodriguez (2005) recruited 35 undergraduate participants at Southern Illinois University at Carbondale to participate in the initial collection of speaking-related cognitions for this project. All participants completed the Personal Report of Confidence as a Speaker

(PRCS; Paul, 1966). Nineteen of these participants (54% of the sample) received a score above 15 on the measure and were designated as high in public speaking anxiety based on a median split, with the remaining 16 participants (46% of the sample) with scores of 14 or lower being designated as low in public speaking anxiety. Each participant was asked to give a speech of roughly three minutes in length, on one of three topics ("Describe life in Carbondale", "describe what you did last summer", or "describe your favorite holiday"). All speeches were recorded on videotape, and participants were informed that an audience of two individuals would be observing their speech through a one-way mirror and rating their performance. This last manipulation was performed to ensure that the participant would perceive himself or herself as a focus of evaluation during the speaking situation; no audience was actually present on the other side of the mirror. Participants were given a five-minute period to prepare their thoughts before the speech. At the end of this period, each participant was given a thought-listing form and asked to write down all of the thoughts they could recall having in the previous five minutes. Additionally, each participant provided estimations on a 0-100 Subjective Units of Distress (SUDS; Wolpe, 1969) scale of how anxious he or she expected to feel during the task and how well he or she expected to perform on the speech. Upon completion of the speech, participants were asked list their thoughts during the speech itself on a second form and to rate their anxiety experiences and speech performance on the same scale on which they had previously made their estimations. Finally, participants completed the Fear of Negative Evaluation Scale (Watson & Friend, 1969), and a short demographic measure.

Conversion of self-statements into potential measure items. After collecting a pool of cognitive self-statements in the aforementioned manner, two trained raters evaluated each thought for both affective valence (positive, negative, or neutral) and focus of attention (self-focused, other-focused, or undifferentiated) using standardized guidelines created especially for the study. Following the rating process, the self-statements were assessed for their potential to serve as measure items. In order to ensure that the selected self-statements were those that were best able to positively differentiate speech-anxious from non-anxious subjects, a variety of factors were considered in this process. First, given the empirical findings that negative, self-focused cognitions are most often associated with anxiety, self-statements rated as meeting this criterion were considered to be more discriminating. Secondly, self-statements generated by individuals who scored highly on the PRCS and reported more anxiety about the speaking task were considered more discriminating than those generated by individuals with lower PRCS scores and less self-reported anxiety. Finally, self-statements which were similar to those made by other participants were judged to be more reliable correlates of speaking anxiety than self-statements which were less commonly reported. The selected self-statements were then re-phrased into grammatically correct complete sentences which preserved the original wording to the greatest degree possible. This process yielded a pool of 35 potential measure items containing multiple exemplars of all four of the possible combinations of affective valence (positive or negative) and attentional focus (self-focused or other-focused) theorized to be relevant to speaking anxiety.

Self-statement item endorsement study. To ensure that the potential measure items remained valid and generalizable correlates of speaking anxiety following their

conversion from the original listed thoughts, another study was performed utilizing a sample of 91 undergraduate students. In a similar fashion to the previous study, these participants were asked to make a three minute extemporaneous speech on one of several standardized topics. The experimental situation was modified to include two audience members, in addition to the video camera, in the room in which the speech was given. This change was made in response to indications from the previous study that being unable to see the purported evaluators lessened the pressure of speaking somewhat. Participants were again told that the audience would be rating their speech; however, while the audience members were instructed to hold clipboards and appear to be making notes during the speech, no actual ratings were made. As before, participants were asked to provide estimations and then ratings of their anxiety and performance on a 0-100 SUDS scale. For this study, an endorsement measure of self-statements was substituted for the thought-listing production measure used in the previous investigation. Following the speech, participants were presented with a list of the 35 potential measure items and asked to indicate which of the thoughts they experienced while speaking. The participants also completed the Personal Report of Confidence as a Speaker (Paul, 1966) and a short demographic measure.

In order to assess whether the self-statement items maintained associations with public speaking anxiety in their revised forms, bivariate correlations were calculated between each of the 35 items and the three specific measures of public speaking anxiety taken (the Personal Report of Confidence and the pre- and post-speech self-report ratings). Results indicated that of the 35 potential measure items, 24 were correlated with all three measures at a statistically significant level ($\alpha < .05$), and of the remaining items,

six were correlated with two of the three measures at the .05 level, and three were correlated with one. Only two of the items failed to reach statistical significance with any of the public speaking anxiety measures. It should be noted that the pre-speech estimation of anxiety was the measure which most commonly failed to correlate with the proposed items, which occurred in nine cases. In the four instances where significant correlations were obtained between the other two members, this may reflect variance in the ability of participants to accurately predict their own anxiety before speaking rather than a lack of relationship between the potential items and the construct of interest. The overall pattern of results obtained from this study suggests a strong basis for the validity of the potential items employed in the current study.

Affective valence and attentional focus rating. Finally, in order to ensure that the 35 prospective measure items reflected an appropriate range of combinations of positive or negative affective valence and self or other-focus of attention, each item was rated on both dimensions by two independent raters. Both raters were trained to make these evaluations using standardized criteria guidelines authored by the primary researcher of the current study. These criteria included a third response option for both affective valence (reflecting neutral affect) and attentional focus (reflecting undifferentiated focus), providing a total of nine categories to allow the raters greater flexibility in response options. Reliability analysis indicated that the raters reached perfect agreement on all 35 of the items, Kappa = 1.0 ($p < .0001$). Of the 35 potential items, 7 were judged to be self-focused and positive, 16 were judged to be self-focused and negative, 3 were judged to be other-focused and positive, and the remaining 8 were judged to be other-focused and negative. None of the items were judged to contain undifferentiated focus of attention or

neutral affective valence. The over-representation of negatively valenced items, and self-focused negative items in particular, is reflective of empirical studies (e.g. Beazley, Glass, Chambless, & Arnkoff, 2001; Mahone, Bruch, & Heimberg, 1993; Pineles & Mineka, 2005; Woody, 1996) documenting the importance of these factors in predicting social anxiety.

Goals and Hypotheses of the Current Study

The primary aim of the current study is to produce a self-report measure of public speaking anxiety through factor analysis of items adapted from empirically-generated cognitive self-statements. The first aim of the study is to use exploratory factor-analytic methods and item-total correlations to determine empirically which of the 35 prospective items are appropriate for inclusion in the final measure. In addition to generating the measure, the current study also seeks to gather preliminary psychometric data regarding internal reliability and convergent and discriminant validity with other measures of speaking and social anxiety. The overarching goal of the investigation is to provide initial data to establish the measure as a reliable and valid assessment of public speaking anxiety that offers tangible predictive benefits in comparison to existing measures. Specific reliability and validity hypotheses for the study include:

1. Cronbach's alpha estimates of internal reliability for the final measure in an undergraduate sample will fall into the good to excellent range of .80 to .95 as described by Nunnally and Bernstein (1994).

2. The final measure will demonstrate convergent validity with the Personal Report of Confidence as a Speaker (Paul, 1966), an existing measure of public speaking anxiety. Due to the equivalence of the constructs being assessed by both measures, the

effect size is expected to be in the high range of r =.5 or above as described by Cohen (1988).

3. The final version of the SCAS will demonstrate discriminant validity with the Fear of Negative Evaluation Scale (Watson & Friend, 1969) and the Social Avoidance and Distress Scale (Watson & Friend, 1969), which are measures of negative evaluation fears and anxiety-related social avoidance behaviors respectively. Since these are general social anxiety measures and not specific to public speaking situations, the size of this effect is expected to be lower than that displayed between the final measure and the Personal Report of Confidence as a Speaker, falling in the moderate range of roughly .3 as described by Cohen (1988).

4. The final version of the SCAS will demonstrate convergent validity with the public self-consciousness subscale of the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975), which measures self-focusing tendencies in social situations. Since self-focusing tendencies are theorized to be of particular importance in public speaking anxiety, the size of the effect is expected to be in the moderate range of roughly r = .3 as described by Cohen (1988).

5. The final SCAS will demonstrate discriminant validity with the private self-consciousness subscale of the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975), which measures self-focusing for introspection and personal awareness. Since this construct is not theorized to contribute to public speaking anxiety, the size of the effect is expected to be in the non-existent or trivial range of r < .1 as described by Cohen (1988).

CHAPTER 2

Method

The current study is part of a larger line of research aimed at producing a cognitive self-statement measure of public speaking anxiety, and specifically contributes initial data on factor structure, reliability, and validity using a sample of undergraduates attending a mid-sized public university located in the Midwest. A primary goal of this study is the creation of a measure of public speaking anxiety that is more empirically-based and more specific to the public speaking situation than existing measures. To this end, the study builds upon previous work in which public speaking-specific cognitions were collected from anxious and non-anxious individuals using the thought-listing method (Cacioppo, von Hippel, & Ernst, 1997) and then re-validated using an endorsement-based strategy (Glass & Arnkoff, 1997). These cognitive self-statements were previously evaluated for emotional valence and focus of attention by independent raters, and were subsequently utilized as potential measure items employed in the current study. The resultant data was used to create a final measure from the pool of prospective items, which was then analyzed for convergent validity with existing measures of public speaking anxiety, social anxiety, and self-focused attention.

Participants

Participants were 367 undergraduate students enrolled in Psychology courses at Southern Illinois University at Carbondale. Of these, 201 participants (54.8% of sample) were female, and 166 participants (45.2% of the sample) were male. The mean age of participants was 20.6 years (SD= 3.5). The predominant ethnic groups in the sample were White, non-Hispanic, reported by 239 participants (65.1%) and Black or African-

American, reported by 96 participants (26.2%). Complete demographic data is presented in Table 1. All participants were compensated with course credit for their participation. No restrictions were placed on subject recruitment.

Procedure

Participants presented for data collection sessions in groups. An undergraduate or graduate research assistant serving as the experimenter for the session briefed the participants in full on their rights as subjects and obtained informed consent for study participation. Participants were told that the intent of the study was to collect data about the ways undergraduates think and behave, and that they would be answering questions about their experiences in public speaking and social situations. Following the informed consent procedure, participants were given a packet of self-report questionnaire surveys containing the prospective public speaking anxiety measure items, the Personal Report of Confidence as a Speaker (PRCS; Paul, 1966), the Fear of Negative Evaluation Scale (FNE; Watson & Friend, 1969), the Social Avoidance and Distress Scale (SADS; Watson & Friend, 1969), the Self-Consciousness Scale (SCS; Fenigstein, Scheier, & Buss, 1975), and a demographic questionnaire. For some participants (n = 196), the measures were included in a mass survey of undergraduates alongside other psychological measures not germane to the present research. After completion of the entire packet of measures, participants were presented with a debriefing form explaining the goals of the study in greater detail, thanked for their participation, and dismissed.

Measures

Prospective Items for Speaking Cognitions and Attention Scale. Thirty-five potential items designed to assess public speaking anxiety related cognitions (Beck &

Rodriguez, 2006) for the measure of interest were administered to participants in a self-report questionnaire. All items took the form of declarative self-statements about public speaking that were adapted from a previous study (Beck, Huber, Marin, & Rodriguez, 2005) which collected cognitions from participants who had participated in a public speaking task. The current study instructed participants to visualize their last few public speaking experiences as a point of reference before responding to the items. Item responses were made on a five-point rating scale ranging from 0 – 4, with a response of 0 indicating that the participant "never" experiences this cognition, a response of 2 indicating that the participant experiences this cognition "about half the time," and a response of 4 indicating that the participant "always" experiences this cognition while speaking in public.

Personal Report of Confidence as a Speaker. The Personal Report of Confidence as a Speaker (PRCS; Paul, 1966) is a 30-item self-report questionnaire designed to assess public speaking fears. Responses are made in a true/false format. The PRCS was developed as the short form of a longer measure (Gilkinson, 1942), and has remained in continued use due to its effectiveness as a screening measure for public speaking anxiety (Phillips, Jones, Rieger, & Snell, 1997). Paul (1966) found that PRCS scores exhibited similar patterns of change to self-reported anxiety scores following a public speaking anxiety intervention, a good indicator of convergent validity. Daly (1978) obtained an alpha reliability of .91 for the PRCS in one administration and an alpha reliability of .94 in a replication, both of which indicate excellent internal reliability. Finally, Phillips, Jones, Rieger, and Snell (1997) found no main effects of gender or age on PRCS score, indicating discriminant validity for the instrument. The Cronbach's alpha internal

reliability statistic for the PRCS in the current sample was calculated at .90, indicating excellent internal reliability.

Social Avoidance and Distress Scale. The Social Avoidance and Distress Scale (SADS), developed by Watson and Friend (1969), is a 28-item true/false format scale designed to assess tendencies toward anxious and avoidant reactions in social situations. The scale consists of two subscales, which assess avoidance and distress, respectively. Watson and Friend (1969) reported a Kuder-Richardson Formula 20 reliability statistic of .94 for the SADS as well as a product-moment correlation of .75 between the two subscales. Leary (1991) observes that the SADS displays correlations of $r \geq .75$ with many other measures of social anxiety, that high scorers on the scale report greater anxiety in real interactions than do low scorers, and that the scale has been successfully used as a measure of outcome in a multitude of clinical investigations into social anxiety treatment. Thus, the SADS demonstrates very good convergent validity. The Cronbach's alpha internal reliability statistic for the SADS in the current sample was calculated at .92, indicating excellent internal reliability.

Fear of Negative Evaluation Scale. The Fear of Negative Evaluation Scale (FNE) is a 30-item true/false format scale developed by Watson and Friend (1969) to assess negative evaluation fears. The FNE has excellent internal consistency, $r_{KR20} = .94$. The FNE was developed concurrently with the SADS scale, and the constructs each scale assesses are conceptualized as complementary factors in producing social anxiety. As such, the FNE correlates moderately with the SADS scale ($r = .51$), and evidence shows that high FNE scorers report more anxiety in evaluative settings and more concern about being negatively evaluated than do low scorers (Leary, 1991). The FNE is widely used in

empirical research into specific components of social anxiety (e.g. Rapee & Lim, 1992; Stopa & Clark, 1993) which have found it able to reliably differentiate socially phobic individuals from control subjects, providing a strong indication of its validity. The Cronbach's alpha internal reliability statistic for the FNE in the current sample was calculated at .92, indicating excellent internal reliability.

Self-Consciousness Scale. The Self-Consciousness Scale (SCS; Fenigstein, Scheier, & Buss, 1975) is a 23-item self-report measure of self-consciousness. Responses to the scale items are made on a 5-point Likert scale anchored by "not at all like me" and "very much like me." In addition to a total score, the SCS yields three subscale scores, which respectively measure public self-consciousness, private self-consciousness, and social anxiety. Test-retest data following a two-week interval (Fenigstein, Scheier, & Buss, 1975) indicate that the SCS displays adequate reliability, with correlations of .80 for the total score, .84 for the public self-consciousness subscale, .79 for the private self-consciousness subscale, and .73 for the social anxiety subscale. The SCS is the most commonly employed self-report measure of self-focused attention (Mor & Wilquist, 2007), and has been widely employed in social anxiety research. The public self-consciousness subscale has demonstrated particularly robust associations with social anxiety (Pilkonis, 1977; Turner, Scheier, Carver, & Ickes, 1978) and related constructs such as fear of negative evaluation (Monfries & Kafer, 1994), suggesting that both the SCS and the construct of self-consciousness in general have a valid relationship with social anxiety. Additionally, Carver and Glass (1976) demonstrated discriminant validity for the public and private self-consciousness subscales of the SCS by finding that neither subscale correlates with measures of intelligence, need for achievement, test anxiety,

impulsivity, or activity level. The Cronbach's alpha internal reliability statistic for the SCS in the current sample was calculated at .83, indicating good internal reliability.

Demographics questionnaire. Participants were also administered a short self-report questionnaire designed especially for use in this study. This measure assessed the demographic variables of gender, age, ethnicity, and year in school. Participants also provided an estimate of the length of time that has elapsed since their last public speech or presentation by selecting from a series of time ranges.

Analytic Strategy

Data analyses for the current study were designed to accomplish two major goals. The first goal was the empirical evaluation of the 35 prospective measure items for inclusion in a final version of the Speaking Cognitions and Attention Scale, and provision of descriptive statistics regarding internal reliability and factor structure of this final measure. To accomplish this, an exploratory factor analysis and item-total correlations were performed on the 35 prospective measure items. Following guidelines suggested by Kline (1986), items which do not load clearly on a single factor, do not load on any factor at a minimum of .4, or do not correlate with the total at a minimum of .5 were dropped. Following the item elimination process, Cronbach's alpha internal reliability was calculated for the final measure.

The second major goal of the current research was examining the convergent and discriminant validity of the final measure. Since the SCAS was designed to specifically measure public speaking anxiety, the pattern of Pearson's *r* correlations between it and other measures with varying degrees of overlap with the construct of public speaking anxiety were examined. As such, these correlations were interpreted as measures of effect

size, using criteria specified by Cohen (1988), rather than for significance testing purposes. The pattern of correlations with the highest degree of theoretical overlap with construct of public speaking anxiety is as follows: highest effect size observed between the SCAS and the Personal Report of Confidence as a Speaker (Paul, 1966), moderate effect sizes between the SCAS and the Fear of Negative Evaluation Scale (Watson & Friend, 1969), the Social Avoidance and Distress Scale (Watson & Friend, 1969), and the Public Self-Consciousness subscale of the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975), and a miniscule effect size observed between the SCAS and the Private Self-Consciousness subscale of the Self-Consciousness Scale. Convergent- and discriminant validity hypothesis testing were interpreted based on degree of resemblance to these effect size patterns.

CHAPTER 3

Results

Data Analysis

Descriptive statistics. 367 participants completed the study. 55 percent of the sample (*n* = 201) was female. The mean age of study participants was 20.6 years (SD = 3.5). The most frequently endorsed ethnicities were White, non-Hispanic (*n* = 239, 65.1%) and Black/African American (*n* = 96, 26.2%), which combined to account for 91 percent of the sample. Eighty percent of the sample (*n* = 297) reported that they had given a public speech or presentation in the last six months. Complete demographics for gender, ethnicity, and reported last public speech or presentation are presented in Table 1.

Prospective item evaluation. Items for inclusion in the final measure were selected from the 35 prospective measure items based on the results of exploratory factor analysis and item-total correlations. Criteria for item exclusion were defined before conducting the analysis. As suggested by Kline (1986), it was decided that items which did not load clearly onto a single factor, load onto any factor at a minimum of .4, or exhibit an item-total correlation of .5 or higher would be dropped. With regard to statistical assumptions, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was calculated to be .97, indicating that partial correlations among variables meet criteria for factor analysis (Tabachnick & Fidell, 2001), and Bartlett's Test of Sphericity was significant at .000, indicating the factorability of the obtained correlation matrix (Tabachnick & Fidell, 2001).

An initial exploratory factor analysis was conducted using the Maximum Likelihood extraction method to determine the appropriate number of factors to retain.

Table 1

Gender, Ethnicity, and Time since Last Speech Demographics (N = 367)

	Number	Percent of total
Gender		
Female	201	54.8
Male	166	45.2
Ethnicity		
American Indian/Alaska Native	2	.5
Asian	6	1.6
Black/African-American	96	26.2
Hispanic/Latino/a	12	3.3
Native Hawaiian/Pacific Islander	1	1.7
White, non-Hispanic	239	65.1
Other	11	3.0
Time since last public speech or presentation		
Two weeks or less	101	27.5
About 1 month	51	13.9
About 3 months	91	24.8
About 6 months	54	14.7
About 1 year	40	10.9
More than 1 year ago	27	7.4
Never given public speech/presentation	3	.8

Several methods of examining the data were employed in making this determination. Using the criterion of retaining factors with eigenvalues greater than 1 (Tabachnick & Fidell, 2001) indicated that four factors should be retained, as the initial eigenvalues were 16.7, 2.3, 1.3, and 1.1. However, a visual examination of the scree plot (Figure 1) appeared to indicate that a two or three-factor solution would be a more appropriate fit to the data. Conduction of parallel analysis, a method which involves the comparison of raw eigenvalue data to mean values of randomized alternative matrices (Hayton, Allen, & Scarpello, 2004) indicated a three-factor solution when the more conservative 95^{th} percentile comparison of parallel matrix means is employed (Table 2).

These differing indicators, coupled with the large amount of variance accounted for by the first factor, made the decision about extraction a difficult and somewhat ambiguous one. Ultimately, given the results of the parallel analysis and the fact that the initial eigenvalue for the fourth factor only slightly exceeded the cutoff of 1, the decision was made to extract three factors from the data. This choice was also made in consideration of the research's stated goal of examining the data for interpretable focus of attention and affective-valence factors, which would have been difficult or impossible if a one or two-factor extraction had been chosen.

A factor analysis specifying a three-factor model was then performed using Varimax rotation with Kaiser Normalization. A summary of the factor loadings, eigenvalues, and commonalities for the rotated solution is presented in Table 3. With regard to factor loadings, Items 4 (*My eyes are wandering all over the room*) and 14 (*They think I am talking too fast*) were dropped for failing to load at .4 on any of the three

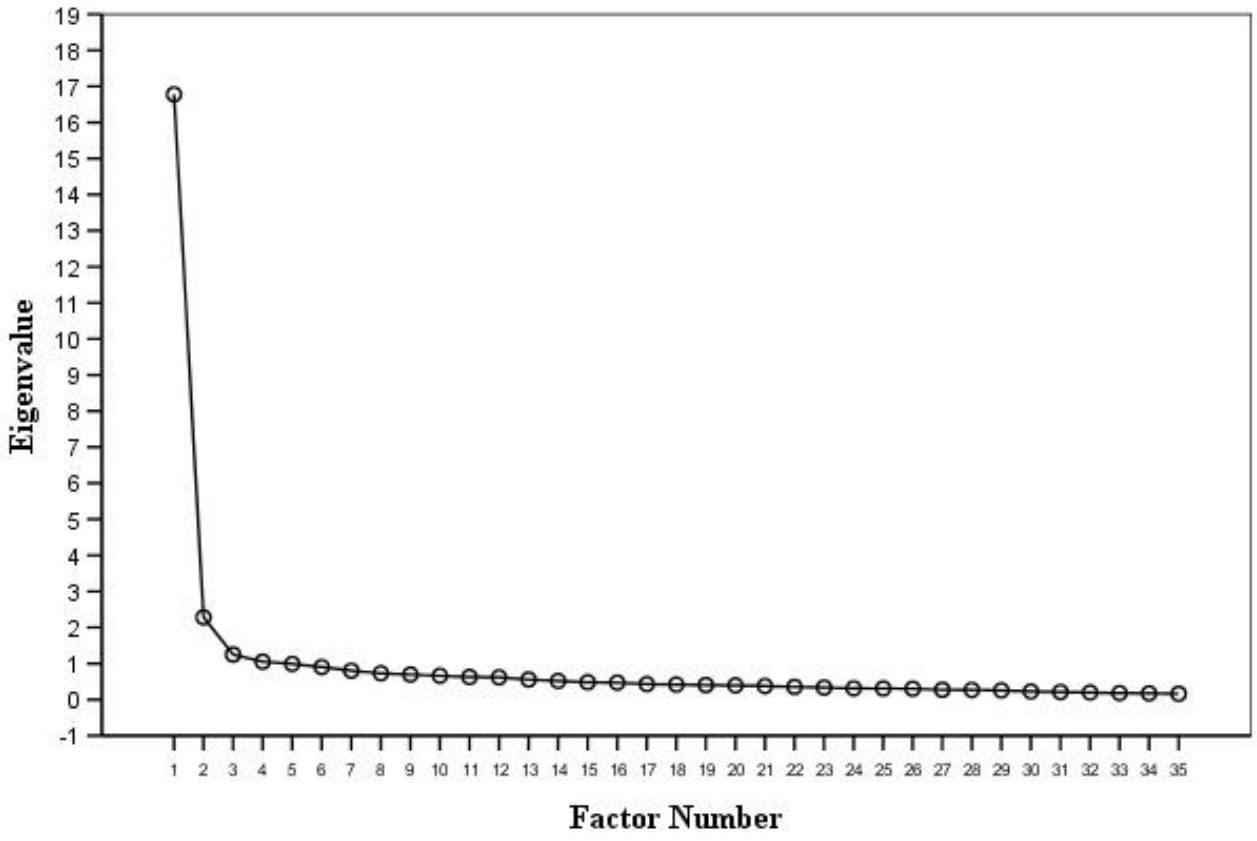

Figure 1. Scree plot for Maximum Likelihood factor analysis of 35 prospective Speaking Cognitions and Attention Scale items.

Table 2

Parallel Analysis Results: Actual and Random Eigenvalues (N = 367)

Actual Eigenvalue	Average Eigenvalue	95th Percentile Eigenvalue
16.37	.74	.81
1.90	.65	.72
.81	.59	.65
.56	.54	.59
.48	.49	.53
.39	.45	.49
.37	.41	.45
.25	.37	.41

Note. Boldface indicates actual eigenvalues which are larger than 95th percentile eigenvalues, indicating a factor is appropriate for retention.

Table 3

Summary of Rotated Factor Loadings for Varimax Three-Factor Solution for the 35 Prospective Items for the Speaking Cognitions and Attention Scale (N = 367)

	Factor Loading			
Item	1	2	3	Communality
1.	.38	**.66**	.12	.60
2.	.35	**.48**	.41	.51
3.	.32	**.74**	.13	.66
4.	.08	.39	.22	.20
5.	**.66**	.32	.20	.57
6.	.37	**.69**	.26	.69
7.	.33	**.43**	**.44**	.50
8.	**.65**	.21	.32	.58
9.	.16	.37	.13	.18
10.	.41	**.57**	.34	.61
11.	.16	**.62**	.39	.56
12.	.36	.47	**.55**	.65
13.	**.71**	.30	.31	.69
14.	.18	.29	.29	.20
15.	.24	**.60**	.36	.55
16.	.44	**.51**	.46	.66
17.	**.70**	.09	.28	.58
18.	.36	**.47**	.29	.44

Note. Boldface indicates highest factor loadings over minimum criteria of .4 (*Table 3 continues*)

(*Table 3 continued*)

Item	Factor Loading 1	2	3	Communality
19.	**.69**	.14	.29	.57
20.	.11	**.54**	.37	.44
21.	.30	**.62**	.38	.62
22.	**.80**	.31	.17	.77
23.	.22	**.52**	.16	.35
24.	.24	**.51**	.33	.42
25.	**.68**	.49	.14	.71
26.	.30	.37	**.42**	.42
27.	**.73**	.47	.08	.75
28.	.30	.37	**.60**	.52
29.	.34	.44	**.58**	.65
30.	**.73**	.32	.24	.70
31.	.20	**.43**	.30	.32
32.	**.55**	.34	.24	.48
33.	.33	**.56**	.34	.54
34.	**.78**	.24	.24	.72
35.	.36	.31	**.62**	.61
Eigenvalues	7.54	7.23	4.21	
% of variance	21.55	20.67	12.04	

Note. Boldface indicates highest factor loadings over minimum criteria of .4

remaining factors, and Item 7 (*I look stiff as a board standing here*) was dropped due to equal loadings on factor 2 and 3.

Examination of item-total correlations revealed that the previously removed Items 4 and 14 also did not meet the minimum item-total correlation of .5 needed for retention in the measure (Kline, 1986). Additionally, Item 9 (*I hope I don't stutter while speaking*) did not meet this criterion and was dropped from the final measure. Finally, Item 31 (*I keep fidgeting with my hands*) was dropped because content of the item was judged to be more behavioral in nature and at odds with the study's goal of creating a cognitively-focused measure of public speaking anxiety. Item total correlations for all 35 prospective SCAS items are presented in Table 4.

Final measure characteristics. The deletion of Items 4, 7, 9, 14, and 31 resulted in a 30 item final measure. Since all responses were made on a 0 to 4 scale, with 0 indicating that the cognition is "never" present and 4 indicating that the cognition is "always" present, potential total scores on this measure range from 0 to 120. The 11 measure items with positive or facilitative content (Items 5, 8, 13, 17, 19, 22, 25, 27, 30, 32, and 34) were reverse-coded so that higher total scores on the final measure indicate greater public speaking anxiety. The mean total score on the measure for the sample was found to be 49.7, with a standard deviation of 22.7. Furthermore, total scores on the measure were normally distributed around the mean, indicating that the scale does not demonstrate floor or ceiling effects. Item-total correlations for the measure ranged from .56 to .81, indicating that each of the 30 measure items is strongly related to the overall score.

Table 4

Corrected Item-Total Correlations for the 35 Prospective Items for the Speaking Cognitions and Attention Scale (N = 367)

Item	Corrected Item-Total Correlation
1. I feel anxious giving this speech.	.69
2. I look stupid to the audience.	.69
3. I am starting to feel uneasy.	.71
4. My eyes are wandering all over the room.	.40
5. The audience sees that I am calm.*	.68
6. I am scared of this entire situation.	.78
7. I look stiff as a board standing here.	.67
8. I think I'm doing well.*	.66
9. I hope I don't stutter while speaking.	.40
10. They can see that I am anxious.	.77
11. My body feels really hot.	.67
12. I sound stupid talking to these people.	.77
13. I look confident standing up here.*	.75
14. They think I am talking too fast.	.43
15. I am trembling standing up here.	.69
16. The audience can tell that I am afraid.	.79
17. They think I am doing well.*	.60
18. My voice sounds timid.	.65
19. I am doing well with the speech.*	.62

Note: * denotes reverse-scored item.

(Table 4 continues)

(Table 4 continued)

Item	Corrected Item-Total Correlation
20. This speech is making me sweat.	.58
21. I am panicking; I want to get out of here.	.75
22. I look comfortable giving this speech.*	.74
23. I hope I don't look stupid in front of these people.	.55
24. I'm going to freeze up.	.61
25. I am comfortable giving this speech.*	.77
26. They can see that I am uncomfortable.	.61
27. I am calm while standing in front of this audience.*	.76
28. The speech I am giving is horrible.	.62
29. I look stiff to the audience.	.75
30. I am confident with my performance.*	.74
31. I keep fidgeting with my hands.	.54
32. This isn't so bad.*	.64
33. I am uncomfortable giving this speech.	.71
34. I look confident to them.*	.71
35. The audience sees that I am doing a bad job.	.69

Note: * denotes reverse-scored item.

SCAS factor loadings. With regard to factor structure, the rotated matrix of the items comprising the final measure contains three factors. A summary of the items comprising each factor and their loadings, excluding the dropped items, is presented in Table 5. The first factor, which accounts for 21% of the total variance, is composed of the 11 reverse-coded positive items (Items 5, 8, 13, 17, 19, 22, 25, 27, 30, 32, and 34). Since the content of all these items reflect facilitative cognitions with respect to the speaking task (e.g. Item 5: *The audience sees that I am calm*; Item 13: *I look confident standing up here*) this factor will henceforth be referred to as Positive Performance Cognitions (PPC). Cronbach's alpha reliability analysis indicated that the PPC subscale displayed a reliability coefficient of .95, indicating excellent internal reliability (Nunnally & Bernstein, 1994). The second factor, which accounts for 20% of the total variance, is composed of 14 items (Items 1, 2, 3, 6, 10, 11, 15, 16, 18, 20, 21, 23, 24, and 33) that reflect mild to moderately negative cognitions about public speaking (e.g. Item 1: *I feel anxious giving this speech*; Item 18: *My voice sounds timid*) and will be referred to as Negative Performance Cognitions (NPC). Cronbach's alpha reliability analysis indicated that the NPC subscale displayed a reliability coefficient of .87, indicating good to excellent internal reliability (Nunnally & Bernstein, 1994). The third factor, which accounts for 10% of the total variance, is composed of 5 items (Items 12, 26, 28, 29, and 35) reflecting cognitions about speaking performance that are more markedly negative and judgmental than those contained in the Negative Performance Cognitions factor (e.g. Item 28: *The speech I am giving is horrible*; Item 35: *The audience sees that I am doing a bad job*) and will be referred to as Catastrophic Performance Cognitions (CPC). Cronbach's alpha reliability analysis indicated that the CPC subscale displayed a

Table 5

Factor Loadings for Varimax Three-Factor Solution for 30 Retained Speaking Cognitions and Attention Scale Items

Item	Factor Loading
Factor 1: Positive Performance Cognitions	
5. The audience sees that I am calm.	.66
8. I think I'm doing well.	.65
13. I look confident standing up here.	.71
17. They think I am doing well.	.70
19. I am doing well with the speech.	.69
22. I look comfortable giving this speech.	.80
25. I am comfortable giving this speech.	.68
27. I am calm while standing in front of this audience.	.73
30. I am confident with my performance.	.73
32. This isn't so bad.	.55
34. I look confident to them.	.78
Factor 2: Negative Performance Cognitions	
1. I feel anxious giving this speech.	.66
2. I look stupid to the audience.	.48
3. I am starting to feel uneasy.	.74
6. I am scared of this entire situation.	.69
10. They can see that I am anxious.	.57
11. My body feels really hot.	.62

Note. $N = 367$ and $\alpha = .97$ for entire measure. (*Table 5 continues)*

(*Table 5 continued*)

Item	Factor Loading
Factor 2: Negative Performance Cognitions	
15. I am trembling standing up here.	.60
16. The audience can tell that I am afraid.	.51
18. My voice sounds timid.	.47
20. This speech is making me sweat.	.54
21. I am panicking; I want to get out of here.	.62
23. I hope I don't look stupid in front of these people.	.52
24. I'm going to freeze up.	.51
33. I am uncomfortable giving this speech.	.56
Factor 3: Catastrophic Performance Cognitions	
12. I sound stupid talking to these people.	.55
26. They can see that I am uncomfortable.	.42
28. The speech I am giving is horrible.	.60
29. I look stiff to the audience.	.58
35. The audience sees that I am doing a bad job.	.62

Note. $N = 367$ and $\alpha = .97$ for entire measure.

reliability coefficient of .88, indicating good to excellent internal reliability (Nunnally & Bernstein, 1994).

Convergent and discriminant validity analytic strategy. After formulating the final 30 item measure, convergent and discriminant validity between total scores on this measure and the other administered measures was examined using Pearson's *r* bivariate correlations as measures of effect size. The accompanying measures administered in the study are designed to assess constructs with varying degrees of conceptual overlap with public speaking anxiety. The measure with the highest expected degree of common variance with the measure of interest is the Personal Report of Confidence as a Speaker (PRCS; Paul, 1966), which is also designed to measure public speaking anxiety. The Fear of Negative Evaluation Scale (FNE; Watson & Friend, 1969) and Social Avoidance and Distress Scale (SADS; Watson & Friend, 1969) are measures of general social anxiety and are not specific to the public speaking task, and as such, should have a moderate degree of common variance with the measure of interest, in accordance with the prevailing conceptualization of public speaking anxiety as a specific form of generalized social anxiety (American Psychiatric Association, 1994).

The Public Self-Consciousness subscale of the Self-Consciousness Scale (SCS) measures dispositional tendencies to focus attention on the self in public or social situations as a means of self-regulation. As discussed above, self-focused attention is theorized to play a key role in social and performance anxiety, and one of the goals of the present study is to incorporate focus of attention elements into assessing fears of public speaking. Therefore, this subscale is expected to share a moderate amount of common variance with the measure of interest. Finally, the private self-consciousness subscale of

the SCS measures the dispositional tendency to focus attention on the self for the purposes of insight or introspection. This construct does not share any conceptual similarity with public speaking anxiety, and it is expected to display a very low amount of common variance with the measure of interest to demonstrate the discriminant validity of the measure. A correlation matrix summarizing the observed relationships between the measures is presented in Table 6.

Summary of Results

Hypothesis 1: Cronbach's alpha estimates of internal reliability for the final measure in an undergraduate sample will fall into the good to excellent range of .80 to .95 as described by Nunnally and Bernstein (1994). This hypothesis was confirmed. Cronbach's alpha internal reliability in the assessed population for the final 30-item Speaking Cognitions and Attention Scale (SCAS) was calculated at $\alpha = .97$, indicating an extremely high level of internal consistency (Nunnally & Bernstein, 1994).

Hypothesis 2: The final measure will demonstrate strong convergent validity with the Personal Report of Confidence as a Speaker (Paul, 1966), with an effect size in the high range of $r \geq .5$ as described by Cohen (1988). This hypothesis was confirmed. Pearson's *r* bivariate correlation between PRCS and SCAS final measure total scores was calculated at .84, indicating a very high degree of common variance between the two scales.

Hypothesis 3: The final measure will also demonstrate moderate convergent validity with the Fear of Negative Evaluation Scale (Watson & Friend, 1969) and the Social Avoidance and Distress Scale (Watson & Friend, 1969), with an effect size falling in the moderate range of approximately .3 as described by Cohen (1988). This hypothesis

Table 6

Correlation Matrix of Convergent and Discriminant Validity Measure Scores (N =367)

	SCAS*	PRCS^	FNE§	SADS‡	SCS Public**	SCS Private†	SCAS PPC|	SCAS NPC`	SCAS CPC±
SCAS	-	.84	.38	.44	.18	-.02	-.90	.95	.88
PRCS		-	.40	.47	.19	-.03	-.80	.78	.70
FNE			-	.51	.61	.26	-.31	.38	.37
SADS				-	.19	.07	-.42	.39	.39
SCS Public					-	.52	-.10	.22	.14
SCS Private						-	.05	.02	-.03
SCAS PPC							-	-.74	-.72
SCAS NPC								-	.81
SCAS CPC									-

Note. * Total score on 30-item Speaking Cognitions and Attention Scale. ^ Total score on Personal Report of Confidence as a Speaker Scale. § Total score on Fear of Negative Evaluation Scale. ‡ Total score on Social Avoidance and Distress Scale. ** Subscale score on Self-Consciousness Scale – Public Self-Consciousness subscale. † Subscale score on Self-Consciousness Scale – Private Self-Consciousness subscale. | Subscale score on Speaking Cognitions and Attention Scale – Positive Performance Cognitions subscale. ` Subscale score on Speaking Cognitions and Attention Scale – Negative Performance Cognitions subscale. ± Subscale score on Speaking Cognitions and Attention Scale – Catastrophic Performance Cognitions subscale.

was confirmed. The Pearson's *r* bivariate correlation between the FNE and the SCAS final measure total scores was calculated at .38, and the Pearson's *r* correlation between the SADS and the SCAS final measure total scores was calculated at .44. Both values reflect a moderate amount of common variance, and are substantially smaller in magnitude than the obtained correlation between the SCAS and PRCS.

Hypothesis 4: The final measure will demonstrate moderate convergent validity with the public self-consciousness subscale of the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975), with an effect size in the moderate range of roughly r = .3 as described by Cohen (1988). This hypothesis was not confirmed. The Pearson's *r* correlation between scores on the public self-consciousness subscale of the SCS and total scores on the SCAS final measure was calculated at .18. This size of this effect is lower than hypothesized, and smaller in magnitude than the observed correlations between the SCAS and both the SADS and FNE. The obtained measurement better fits Cohen's (1988) classification of a "small" effect size.

Hypothesis 5: The final measure will demonstrate discriminant validity with the private self-consciousness subscale of the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975), with an effect size in the trivial range of r < .1 as described by Cohen (1988). This hypothesis was confirmed. The Pearson's *r* correlation between scores on the private self-consciousness subscale of the SCS and total scores on the SCAS final measure was calculated at -.02, indicating a negligible effect size and little to no common variance between the two measures. This relationship is substantially smaller than that observed between the SCAS and all other measures employed in the study.

Exploratory Analyses

In order to further investigate the lack of focus of attention effects in the factor structure of the Speaking Cognitions and Attention Scale in the current study, alpha reliability and convergent and discriminant validity were also calculated for subscales generated based on the ratings of attentional focus and affective valence made by trained raters prior to the data collection process. These analyses were performed to examine the possibility that grouping the final SCAS items based on combinations of attentional focus and affective valence might yield different relationships with the convergent validity variables, potentially suggesting effects of attentional focus not found in the main analyses. After excluding the five prospective items not incorporated into the final measure, the four subscales were as follows: self-focused, negative items, consisting of Items 1, 3, 6, 11, 12, 15, 18, 20, 21, 24, 28, and 33; self-focused, positive items, consisting of Items 8, 13, 19, 22, 25, 27, 30, and 32; other-focused, negative items, consisting of Items 2, 10, 16, 23, 26, 29, and 35; and other-focused, positive items, consisting of Items 5, 17, and 34.

Cronbach's alpha reliability analyses indicated that the self-focused, negative and the self-focused, positive subscales displayed identical reliability statistics of .93, indicating excellent internal reliability for both. Internal reliability for the other-focused, negative items was calculated at .87, indicating 'good' reliability. Finally, the other-focused, positive items displayed a reliability of .82, also indicating 'good' reliability. The shorter length of the other-focused, positive subscale likely accounts for some of the lowered reliability in comparison to the other subscales.

Convergent and discriminant validity analyses were repeated, again examining Pearson's *r* correlations as measures of effect size. Correlations between all four subscales, the SCAS total score, and the convergent and discriminant validity measures are presented in matrix form in Table 7. Examination of the correlations reveals that each of the four subscales correlates with the convergent validity measures in a pattern highly similar to that observed with the SCAS total score in the main study; with the highest observed correlations with the Personal Report of Confidence as a Speaker, moderate correlations with the Fear of Negative Evaluation Scale and the Social Avoidance and Distress Scale, small-to-moderate correlations with the public self-consciousness subscale of the Self-Consciousness Scale, and extremely small correlations with the private self-consciousness subscale of the Self-Consciousness Scale. The effect sizes for each of these correlations display a high degree of similarity to those observed with the SCAS total score, with the exception of lower correlations between the public self-consciousness subscale of the SCS and the other-focused, positive and self-focused, positive SCAS subscales.

Table 7

Exploratory Analysis: Correlation Matrix of Convergent and Discriminant Validity Measure Scores (N = 367)

	SCAS*	SCAS SP|	SCAS OP`	SCAS SN±	SCAS ON{}	PRCS^	FNE§	SADS	SCS Public**	SCS Private†
SCAS	-	-.90	-.80	.95	.94	.84	.38	.44	.18	-.02
SCAS SP		-	.86	-.75	-.76	-.80	-.31	-.42	-.11	.04
SCAS OP			-	-.63	-.69	-.71	-.27	-.37	-.06	.06
SCAS SN				-	.90	.78	.37	.40	.19	-.01
SCAS ON					-	.76	.40	.42	.20	.00
PRCS						-	.40	.47	.19	-.03
FNE							-	.51	.61	.26
SADS								-	.76	.07
SCS Public									-	.52
SCS Private										-

Note. * Total score on 30-item Speaking Cognitions and Attention Scale. ^ Total score on Personal Report of Confidence as a Speaker Scale. § Total score on Fear of Negative Evaluation Scale. ‡ Total score on Social Avoidance and Distress Scale. ** Subscale score on Self-Consciousness Scale – Public Self-Consciousness subscale. † Subscale score on Self-Consciousness Scale – Private Self-Consciousness subscale. | Subscale score on Speaking Cognitions and Attention Scale – Self-focused Positive Items. ` Subscale score on Speaking Cognitions and Attention Scale – Other-focused Positive Items. ± Subscale score on Speaking Cognitions and Attention Scale – Self-focused Negative Items. {} Subscale score on Speaking Cognitions and Attention Scale – Other-focused Negative Items

CHAPTER 4

Discussion

Summary of Results

The present study utilized an exploratory factor analysis of an initial sample of 35 empirically-generated prospective questionnaire items to create the Speaking Cognitions and Attention Scale (SCAS), a 30-item self-report measure of public speaking anxiety. The internal reliability and convergent and discriminant validity properties of the final scale were also examined. Results indicated that the SCAS has a 3- factor structure and displays excellent internal reliability and strong item-total correlations. Convergent validity analyses with other self-report measures largely followed the hypothesized pattern, with a high correlation found between the SCAS and another measure of public speaking anxiety, moderate correlations between the SCAS and two measures of generalized social anxiety, and no statistical relationship with a measure of introspection that is theoretically unrelated to public speaking anxiety. However, the statistical relationship between the SCAS and a measure of self-focused attention in public situations was not as large as hypothesized.

Implications of Obtained Results

Item Elimination Process

The first goal of the current study was selecting self-statement items for the final measure from the initial pool of 35 prospective items administered to all participants. Items were selected for inclusion using criteria suggested by Kline (1986), namely, clearly loading on one factor at .4 or higher and displaying an item-total correlation of .5 or higher. Selection of these criteria was intended to increase the likelihood that the

resulting final SCAS measure would display a clear factor structure and a high degree of specificity for the measurement of public speaking anxiety.

The selection process eliminated 5 of the prospective items, leaving a 30-item final measure. Three items (Item 4: *My eyes are wandering all over the room,* Item 7: *I look stiff as a board standing here,* and Item 14: *They think I am talking too fast*) were dropped for failing to meet the predetermined criteria for factor loading. A fourth item (Item 9: *I hope I don't stutter while speaking*) was removed for failing to correlate with the total at .5 or higher. Finally, a fifth item was removed (Item 31: *I keep fidgeting with my hands*) because its content was judged to be more reflective of a behavior than a cognition, and thus, at odds with the intent of the scale.

The fact that only a modest percentage (14.3%) of the 35 prospective items was removed during the selection process suggests that the naturalistic thought-sampling process used to generate these items was successful in measuring a narrow and consistent domain of interest. Furthermore, the strong item-total correlations and defined 3-factor structure found in the final 30-item SCAS measure provide a positive indication that empirically sampled cognitive self-statements can be translated into a cohesive scale with relatively little modification. In all, the process of constructing the final SCAS scale and the resulting output appears to lend support to the claims of cognitive assessment theory (Cacioppo, von Hippel, & Ernst, 1997; Glass & Arnkoff, 1994; Glass, Merluzzi, Biever, & Larsen, 1982) as well as the viability of the current study's goal of using empirical methods to create a measure of public speaking anxiety.

SCAS Internal Characteristics

Another aim of the current research is the acquisition of initial data on the reliability of the final 30-item iteration of the SCAS. The high Cronbach's alpha internal reliability estimate of $\alpha = .97$ obtained for the SCAS in the sample demonstrates that participant responses on the 30 items comprising the scale exhibited highly consistent patterns with one another. This provides a strong indicator that the SCAS measure items represent a specific construct (Streiner, 2003). High internal reliability estimates have traditionally been viewed as a prerequisite for the use of a psychometric instrument for research and clinical purposes (Nunnally & Bernstein, 1994).

Some authors (e.g. Kline, 1986; Streiner, 2003) have advanced the argument that very high Cronbach's alpha internal reliability scores of .90 and above may actually be harmful to the content validity of a measure if attained by utilizing items that measure only one aspect of a construct at the expense of other important dimensions. In the case of the SCAS, however, the measure was specifically conceived to focus narrowly on speaking-anxiety related cognitions, based on the emphasis placed on the causal role of cognitive factors in contemporary models of the construct (e.g. Clark & Wells, 1995; Rapee & Heimberg, 1997), as well as the work of psychometric theorists (e.g. Glass & Arnkoff, 1997; Cacioppo, von Hippel, & Ernst, 1997) who emphasize the external validity benefits of creating highly specific cognitively-focused measures of psychological constructs. Therefore, the very large Cronbach's alpha obtained in the current study may be a positive indication that the SCAS has fulfilled the original intention of specifically measuring speaking-anxiety related cognitions.

SCAS Factor Structure and Affective Valence

An exploratory factor analytic procedure indicated a three-factor solution for the items on the SCAS (Table 5). Examination of the items comprising each factor indicated that within each factor, items appeared to be grouped according to affective valence. The Positive Performance Cognitions (PPC) factor grouped together facilitative thoughts about the speaking situation and the likelihood of performance success, typified by thoughts about "doing well," "being calm," and "looking comfortable." The Negative Performance Cognitions (NPC) factor delineated debilitative, anxiety-related cognitions, typified by thoughts about "being anxious," "feeling hot," and "sounding timid." The Catastrophic Performance Cognitions (CPC) factor collected items reflecting cognitions which were more markedly negative and judgmental than the NPC factor, typified by thoughts of "looking stupid," "doing a bad job," and "giving a horrible speech."

The identification of three separate affective valence factors within the sample is somewhat contrary to expectations, as the majority of theoretical and empirical work on anxiety processes and cognitive assessment (e.g. Cacioppo, von Hippel, & Ernst, 1997; Carver, 2006; Glass & Arnkoff, 1994; Mahone, Bruch, & Heimberg, 1993) emphasizes a straightforward distinction between positively and negatively valenced emotions. The current data suggests that with regard to speaking anxiety, a qualitative distinction may exist between negative thoughts that refer to basic anxiety-related concerns and those that refer to directly to negative evaluation by others or extremely poor social performance. It should be noted that the functional aspects of a more straightforward positive-negative distinction appear to be essentially preserved within the sample, with the PPC factor correlating with less anxiety on the PRCS and SADS and both the NPC and CPC factors

correlating with more anxiety on these measures (Table 6). This lends credence to the notion that positively-valenced cognitions are associated with facilitation of speaking performance and negatively-valenced cognitions are associated with debilitation of speaking performance, although the data in the current study is limited by a lack of behaviorally specific dependant variables.

Potential implications of CPC factor. Although it is currently unclear why the items constituting the Catastrophic Performance Cognitions factor on the SCAS were found to be a distinct factor rather than being subsumed under the Negative Performance Cognitions factor, a few potential explanations can be advanced. The most straightforward possibility is that the CPC items tap into a qualitatively different variant of public speaking anxiety than do the NPC items. As previously discussed, public speaking anxiety is the most common form of social anxiety, with up to a third of Americans reporting a significant degree of anxiety or avoidance regarding speaking in public (Kessler, Stein, & Berglund, 1998). Within this population, however, only 30% may meet diagnostic criteria for a *DSM* diagnosis of Social Phobia. The distinction between clinical and subclinical experiences of social anxiety typically implies that the former involves more severe experiences of anxiety and avoidance and more pervasive fears of being negatively evaluated by others (American Psychiatric Association, 1994; Rapee & Lim, 1992; Stopa & Clark, 1993). Since the CPC factor is largely constituted of items which explicitly address negative evaluation of speaking performance, endorsement of these items may indicate greater concerns about being negatively evaluated and a higher likelihood of meeting criteria for a Social Phobia diagnosis.

Unfortunately, the currently available data is insufficient to draw strong conclusions regarding the validity of this interpretation. Convergent validity analyses (Table 6) indicate that the scores on the CPC factor are not more highly correlated with total scores on the SAD, PRCS, or FNE scales when compared with scores on the PPC or NPC factors. Although this would seem to indicate that endorsement of items on the Catastrophic Performance Cognitions factor is not associated with more severe anxiety, broader support is needed before making a substantive conclusion to this effect. Specifically, correlating the SCAS with more specific behavioral data, such as participant ratings following in vivo exposure and assessment of functional impairment reflecting the *DSM-IV* criteria for Social Phobia, specific type, would be a more externally valid test than the self-report measures employed in the current study, and would likely yield more robust results.

A second potential explanation for the identification of two distinct negatively-valenced factors in the current study addresses the process of experiencing and interpreting positive and negative emotional experiences while speaking in public. As noted above, popular cognitive models of social anxiety, such as the one proposed by Clark and Wells (1995), focus on the role that attention to internal and external feedback plays in creating and sustaining the anxiety response. Positive affective experiences, such as feeling confident or receiving praise from others, are thought to indicate good social performance, while negative affective experiences, such as experiencing anxiety symptoms or being criticized by others, are thought to indicate poor social performance and increased likelihood of negative evaluation by others. In situations where negative evaluations by others appear possible or likely, these theories predict that individuals will

be more attuned to negative experiences that constitute internal and external signifiers of poor performance.

Given that public speaking is widely perceived as a threatening or anxiety-provoking task, individuals in the general population may be more attuned to subtleties and variations in negative affective experiences related to speaking in public because of the greater importance of these experiences in providing anxiety-related feedback. If this is indeed the case, then this phenomenon may have informed the distinct response patterns that resulted in the Negative and Catastrophic Performance Cognitions factors observed in the current sample. By contrast, individuals may be less predisposed to attend to variations in positive affective experiences in public speaking, possibly because such experiences may generally signify "performing well enough." If so, this may account for the single SCAS Positive Performance Cognitions factor observed in the current sample.

SCAS Factor Structure and Focus of Attention

Contrary to one of the stated goals of the current research, exploratory factor analysis did not indicate that focus of attention played a role in the factor structure of the SCAS in the current sample. One of the intended functions of the scale was to provide a means of measuring the relative contributions of self- and other-focused attention in public speaking anxiety in a retrospective self-report questionnaire. While the role of self-focused attention in exacerbating social and performance anxiety has been discussed thoroughly in both the theoretical (Carver & Scheier, 1998; Clark & Wells, 1995; Rapee & Heimberg, 1996) and empirical (Mahone, Bruch, & Heimberg, 1993; Melchior & Cheek, 1990; Monfries & Kafer, 1994; Woody, 1996; Woody & Rodriguez, 2000) literatures, the attempt made by the current research to measure this construct as an

underlying factor in the SCAS does not appear to have met with success, as evidenced by the lack of discernable focus of attention elements in the factor structure of measure responses, as well as the lack of observed differences in the magnitude of convergent validity correlations between items judged to be self-focused and those judged to be other-focused indicated by exploratory analyses.

Several potential explanations can be advanced as to why this is the case. One possibility might be flaws in the manner in which focus of attention was conceptualized and evaluated in the in-vivo speaking cognitions that formed the basis for the measure items. This process equated focus of attention with the subjective personal pronouns employed in the cognition, so that use of words such as "I" or "my" was interpreted to denote self-focused attention, while use of words such as "they" or "these people" was interpreted to denote other-focused attention. However, within the parameters of the thought-listing method employed in this previous research, there is no conclusive way of determining if an individual's word choice with regard to the subjective personal pronoun provides an accurate reflection of his or her attentional focus while experiencing the cognition. It is possible that variance in word choice might simply be an individual difference with no bearing on attention at all. If this is the case, then the assumption that elements reflecting focus of attention were present in the SCAS items is likely to have been a faulty one.

A second potential explanation for the lack of a perceptible attentional focus factor in the SCAS sample responses may involve biases inherent to the retrospective format of the SCAS as it was administered in the current sample. Before responding to the questions, sample participants were instructed to "think back to the last several times"

they gave public speeches and base their responses to the SCAS items on their recall of these experiences. As such, participant responses are subject to retrospective biases that might have significantly impacted the ability of the items to reflect certain aspects of the actual experience of speaking in public.

Two observations raise the strong possibility that focus of attention elements may be at particular risk to have been obscured by recall biases in the present study. The first is that attention tends to be a fluid process, with frequent shifts being a natural aspect of ordinary consciousness. As a result, changes in attention may be less subjectively remarkable than changes in affect, which tend to be less common and are more widely recognized to have a salient impact on current functioning. Thus, individuals may be less likely to recognize or recall the fact that their attentional processes underwent a shift upon entering a public speaking situation, while retaining memories of positive or negative emotional experiences.

Secondly, the general lack of conscious awareness paid to focus of attention likely results in a decreased likelihood that individuals will habitually attempt to self-regulate their attentional processes, particularly in a cognitively demanding situation such as speaking in public. The fact that focus of attention has been effectively manipulated in experimental contexts using relatively simple interventions such as placing mirrors in front of the subject (Scheier & Carver, 1983), mandating a particular type of speech content (Woody, 1996; Woody & Rodriguez, 2000), and providing mock heart-rate feedback (Pineles & Mineka, 2005) may speak to the lack of conscious effort most individuals place upon maintaining control of these processes. Since self-regulation processes appear to be particularly significant in goal-directed social behaviors such as

public speaking, elements such as focus of attention that are not consciously regulated may be less salient when respondents attempt to reconstruct their speaking-related cognitive processes, making retrospective assessment more difficult.

A third possibility is that the failure to identify SCAS focus of attention factors in the current sample may simply indicate that focus of attention in public speaking anxiety does not display an orthogonal relationship to affective valence at the underlying factor level. Although this may appear to be at odds with empirical findings supporting a distinct role of self-focused attention in social anxiety (Mahone, Bruch, & Heimberg, 1993; Stopa & Clark, 1993; Woody, 1996; Woody & Rodriguez, 2000), Clark and Wells' (1995) cognitive model of social anxiety can support a conceptualization that accommodates both the present findings and those of previous studies. In this model, anxiety in public speaking situations initially manifests as an affectively-valenced cognitive response to the likelihood of negative evaluation by the audience. Changes in attentional focus follow in response to this affective experience, and can serve to prolong or attenuate anxiety depending on the elements which are focused upon more heavily. The temporal sequence implies that the affective valence of cognitions is the primary influence on public speaking anxiety, and that the focus of these cognitions is a secondary process which may mainly influence the course of the anxiety experience.

Given the results of the current study, this reading of Clark and Wells' (1995) model could suggest that focus of attention may display different effects within the identified Positive, Negative, or Catastrophic cognitions, rather than displaying a general orthogonal relationship to affective valence. In other words, focus of attention could display significantly different effects depending on the particular affective valence of the

cognition; for instance, self-focused negative cognitions might prolong an anxiety response specifically through enhanced sensitivity to physiological responses, while self-focused positive cognitions might lessen anxiety by directly promoting a subjective sense of competence or efficacy. If this is the case, it may suggest that focus of attention effects depend on an interaction with affective valence that was not adequately captured in the SCAS items, and may be difficult or impossible to measure through self-report item in general.

Convergent and Discriminant Validity of SCAS Total Scores

The SCAS was designed in accordance with theories of cognitive assessment (e.g. Cacioppo, von Hippel, & Ernst, 1997; Glass & Arnkoff, 1994; Glass, Merluzzi, Biever, and Larsen, 1982) which hold that cognitions associated with particular constructs can be used as items to create valid measures of these constructs. As such, finding initial support for the validity of the SCAS in measuring public speaking anxiety was another central goal of the current research. Within the current study, the outcome measures employed to test convergent validity hypotheses were other self-report measures of public speaking and social anxiety, specifically the Personal Report of Confidence as a Speaker (PRCS; Paul, 1966), the Self-Consciousness Scale (SCS; Fenigstein, Scheier, & Buss, 1975), the Social Avoidance and Distress Scale (SADS; Watson & Friend, 1969), and the Fear of Negative Evaluation Scale (FNE; Watson & Friend, 1969).

While public speaking anxiety has been conceptualized (Clark & Wells, 1995; Rapee & Heimberg, 1997) and empirically studied (Rodebaugh & Rapee, 2005; Wald & Rodriguez, 2005; Woody, 1996; Woody & Rodriguez, 2000) from theoretical

perspectives originally formulated to explain general interaction anxiety, it also displays unique and distinguishing characteristics. Clinically, public speaking anxiety is conceptualized as a specific subtype of Social Phobia in the DSM-IV (American Psychiatric Association, 1994), and the prevalence of any form of anxiety is higher in public speaking situations than in general interaction situations (Kessler, Stein, & Berglund, 1998). The fact that many individuals who report significant anxiety while speaking in public do not suffer anxiety in other social contexts (Pollard & Henderson, 1988) suggests that elements unique to the speaking situation or more pronounced within it are particularly anxiety-provoking. This is a particularly important point in the current study, as one of the main dictates of cognitive assessment (Clark, 1988; Glass & Arnkoff, 1994; Heimberg, 1994) is that the measure should display a high degree of situational specificity with the construct of interest. This study utilized a variety of general and specific convergent validity measures to assess whether the pattern of associations these measures exhibited with the SCAS matched a profile consistent with the construct of public speaking anxiety.

To do so, Pearson's *r* correlations were calculated between each discriminant validity measure and the SCAS. The correlations were interpreted as measures of effect size to facilitate comparisons regarding the magnitude of shared variance between the SCAS and the other measures. The PRCS (Paul, 1966) displayed the largest amount of shared variance with the SCAS in the current sample. Since the PRCS was the only specific public speaking anxiety measure included in the current study, the level of statistical similarity augurs well for the ability of the SCAS to measure public speaking anxiety. More moderate amounts of shared variance were observed with the FNE and the

SADS (Watson & Friend, 1969), which respectively measure cognitive and behavioral aspects of general social anxiety. This result again matches expectations for the SCAS, as general social anxiety is thought to be closely related to, but not synonymous with, the processes involved in public speaking anxiety.

The effect size of the observed correlation between the SCAS and the public self-consciousness subscale of the SCS (Fenigstein, Scheier, & Buss, 1975) was lower than expected. This subscale measures tendencies to focus on the self in social situations, a construct that has demonstrated associations with social anxiety processes in the past (Mahone, Bruch, & Heimberg, 1993; Stopa & Clark, 1993; Woody, 1996; Woody & Rodriguez, 2000). However, the effect size of the association between the SCAS and the private self-consciousness subscale of the SCS was not significantly different from zero. This finding was consistent with expectations and demonstrates the discriminant validity of the SCAS, since the construct of private self-consciousness is theoretically unrelated to public speaking or other forms of social anxiety.

In general terms, the overall pattern of correlations supports the specificity of the SCAS in measuring public speaking anxiety. The main point of departure from prediction is the small size of the effect between the SCAS and the public self-consciousness subscale of the SCS, which suggests that self-focusing tendencies do contribute to variance in SCAS item responses, but that the contribution is relatively small. This finding is particularly interesting in light of the previously discussed failure to identify focus of attention elements in the factor structure of the SCAS, and provides further evidence that the ability of the SCAS to measure focus of attention in public speaking anxiety may be limited in key ways. Alternatively, the size of this effect may be due to

the format of the study and general difficulties in conducting empirical investigation into attentional focus using retrospective measures. Further research is needed to clarify the factors involved in the relationship between attentional focus, speaking anxiety, and measurement with the SCAS.

Comparison with Personal Report of Confidence as a Speaker

As previously mentioned, the current study intended to create a measure of public speaking anxiety with a more clearly defined theoretical and empirical basis than existing measures of the construct. The potential advantages of the SCAS in this regard can be discussed by drawing a detailed contrast with the Personal Report of Confidence of a Speaker (Paul, 1966). The PRCS provides an excellent point of comparison with the SCAS because it is an established and frequently used self-report measure of public speaking anxiety (Philips, Jones, Rieger, & Snell, 1997) and because it was administered alongside the SCAS in the current sample as one of the main convergent validity measures.

A high correlation of .87 was obtained in the current sample between the SCAS and PRCS. As previously discussed, this degree of overlap is a good indicator of the specificity and convergent validity of the SCAS, since the PRCS has demonstrated relationships with public speaking anxiety in previous studies (Beck, et al., 2005; Paul, 1966; Wald & Rodriguez, 2005). However, it also raises valid questions about whether or not the SCAS is functionally redundant with the PRCS in terms of its utility for measuring and conceptualizing public speaking anxiety. A closer examination of the differences in how the two scales were formulated and how each measures the construct allows a clearer distinction to be drawn.

Differences in formulation and item content. One of the largest differences between the SCAS and PRCS is the method used to formulate each measure. The 30 item PRCS in question (Paul, 1966) is actually a selection of the items from Gilkinson's (1942) original 104-item Personal Report of Confidence as a Speaker that were found to have the greatest discriminant validity in identifying low and high speech-anxious individuals. In turn, Gilkinson's (1942) items were generated solely by the author to be face-valid in representing various degrees of fear and confidence in speaking at different time periods relative to the speaking task. Paul's (1966) 30-item PRCS reflects this diversity of foci, containing items that assess behaviors (Item 2, *My hands tremble when I try to handle objects on the platform*), items that assess reactions before (Item 24, *I perspire and tremble just before getting up to speak*), during (Item 26, *I am fearful and tense all the while I am speaking before a group of people*), and after speaking (Item 6, *At the conclusion of a speech, I feel that I have had a pleasant experience*), as well as items that reflect personal preferences regarding aspects of the speaking situation (Item 13, *I prefer to have notes on the platform in case I forget my speech*). In contrast, the SCAS items were generated from the self-reported cognitions of undergraduate students engaging in an in-vivo public speaking situation and focus narrowly on cognitive self-statements made about an ongoing speaking situation (e.g. Item 20, *This speech is making me sweat*). Cognitive assessment theory (Cacioppo, von Hippel, & Ernst, 1997; Glass & Arnkoff, 1994; Glass, et al., 1982) suggests that using naturalistic items and taking a narrower focus on in-vivo cognitions produces a more valid measurement of psychological constructs, particularly for constructs such as social and performance anxiety in which cognitions have been demonstrated to play a large role in the larger

response (Alden, Bieling, and Wallace, 1994; Ayers, 1988; Beazley, Glass, Chambless, & Arnkoff, 2001; Hope, Rapee, Heimberg, and Dombeck, 1990; Mahone, Bruch, & Heimberg, 1993).

Comparison of internal characteristics. The fact that the SCAS correlated very highly with the PRCS despite the markedly narrower focus of the SCAS items is consistent with the claim of cognitive assessment theory that specific measurement of cognitive elements can capture relevant variance in speaking anxiety. A comparison of Cronbach's alpha internal reliability statistics obtained for the SCAS and PRCS in the sample indicates a value of $\alpha = .90$ for the PRCS and a value of $\alpha = .97$ for the SCAS. Although both of these values indicate excellent internal reliability (Nunnally & Bernstein, 1994), the higher reliability estimate for the SCAS may be an indicator that the measure has met its goal of measuring a more narrow and specific element of the public speaking anxiety experience (Streiner, 2003). With regard to item composition, item-total correlations (Table 8) in the current sample for nine PRCS items (Items 4, 13, 14, 17, 19, 20, 23, 24, and 30) fell below the minimum criteria of .5 suggested by Kline (1986), and the highest observed item-total correlations were slightly above .6 (Items 6, 16, and 26). In comparison, all 30 SCAS items display item-total correlations above .5, with the highest observed correlations being slightly below .8 (Items 6, 12, 16, and 25). This indicates that on the whole, the SCAS items are more consistent with total scores than the PRCS items, and suggests that the SCAS items hold together better as a scale than do the PRCS items.

Distributions in the current sample. A visual comparison of the distributions of total scores on the SCAS (Figure 2) and PRCS (Figure 3) in the current sample indicates

Table 8

Corrected Item-Total Correlations for the Personal Report of Confidence as a Speaker (N = 367)

Item	Corrected Item-Total Correlation
1. I look forward to an opportunity to speak in public.*	.51
2. My hands tremble when I try to handle objects on the platform.	.49
3. I am in constant fear of forgetting my speech.	.54
4. Audiences seem friendly when I address them.*	.32
5. While preparing a speech, I am in a constant state of anxiety.	.46
6. At the conclusion of a speech, I feel that I have had a pleasant experience.	.61
7. I dislike to use my body and voice expressively.	.43
8. My thoughts become confused and jumbled when I speak before an audience.	.60
9. I have no fear of facing an audience.*	.52
10. Although I am nervous just before getting up, I soon forget my fears and enjoy the experience.*	.55
11. I face the prospect of making a speech with complete confidence.*	.60
12. I feel that I am in complete possession of myself while speaking.*	.58
13. I prefer to have notes on the platform in case I forget my speech.	.20
14. I like to observe the reactions of my audience to my speech.*	.35
15. Although I talk fluently with friends I am at a loss for words on the platform.	.55
16. I feel relaxed and comfortable while speaking.*	.61
17. Although I do not enjoy speaking in public, I do not particularly dread it.*	.18

Note. * denotes reverse-scored item.

(Table 8 continues)

(Table 8 continued)

Item	Corrected Item-Total Correlation
18. I always avoid speaking in public if possible.	.46
19. The faces of my audience are blurred when I look at them.	.22
20. I feel disgusted with myself after trying to address a group of people.	.27
21. I enjoy preparing a talk.*	.55
22. My mind is clear when I face an audience.*	.53
23. I am fairly fluent.*	.33
24. I perspire and tremble just before getting up to speak.	.41
25. My posture feels strained and unnatural.	.50
26. I am fearful and tense all the while I am speaking before a group of people.	.62
27. I find the prospect of speaking mildly pleasant.*	.51
28. It is difficult for me to calmly search my mind for the right words. to express my thoughts.	.49
29. I am terrified at the thought of speaking before a group of people.	.58
30. I have a feeling of alertness in facing an audience.*	.14

Note. * denotes reverse-scored item.

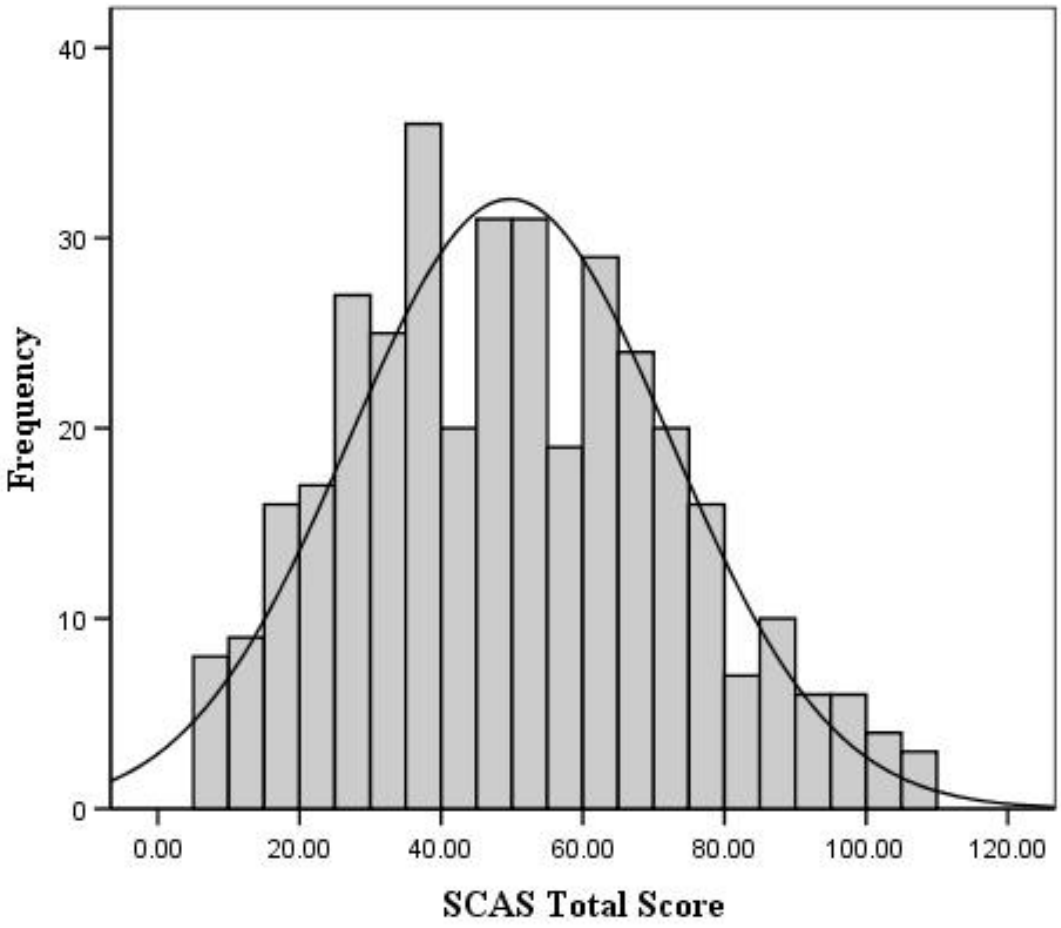

Figure 2. Distribution of scores on the 30-item final Speaking Cognitions and Attention Scale in study sample (N = 367). Mean score is 49.7 (SD = 22.7).

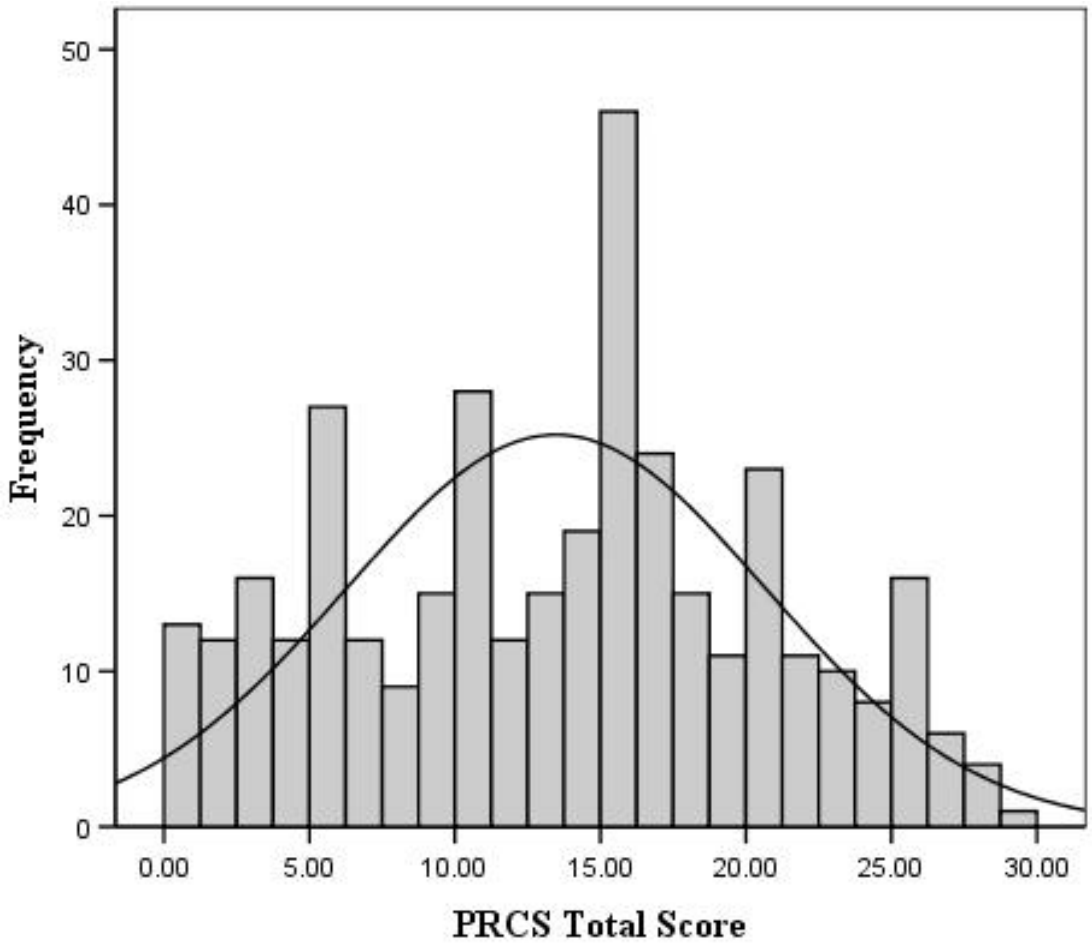

Figure 3. Distribution of scores on the Personal Report of Confidence as a Speaker (PRCS; Paul, 1966) in study sample (N = 367). Mean score is 13.5 (SD = 7.2).

notable differences between the two measures. In the case of the PRCS, the mean score of 13.5 appears to be heavily influenced by a pronounced mode of 15 at the exact center. On each side of the mean, the distribution of scores is relatively flat around 10 observations, with peaks at scores of 5, 10, 20, and 25. For the SCAS, the mode of 38 is not substantially more prominent in the distribution than the mean of 49.7, and the distribution of scores on either side of the mean is more graded than that found in the PRCS and more consistent with a bell-curve distribution. This distribution suggests that total scores on the SCAS may do a better job of measuring speaking anxiety as a continuous variable. This may be a manifestation of larger differences in how the two measures were conceptualized, with Paul (1966) designing his version of the PRCS to discriminate between low and high-anxious individuals using a variety of speaking-related items and a dichotomous response format, while the SCAS was designed with a continuous response format to measure the presence and prevalence of specific anxiety-related cognitions.

Potential for future research applications. The current data indicate that the internal characteristics of the SCAS compare favorably to those of the PRCS. Pending further validation, this suggests that the SCAS is likely to be a useful tool in conducting cross-sectional correlational research on public speaking anxiety and screening individuals for public speaking fears. After further external validation using actual public speaking situations, the SCAS may prove to be more adaptable to experimental scenarios than the PRCS. While both scales conceive and measure public speaking anxiety as a stable trait, the specific focus on in-vivo cognitions in the SCAS may allow for the measure to be modified to measure cognitions in a specific speaking experience by

changing the directions to reflect this and altering the response format to be appropriate to the situation. Although doing so would necessitate that the scale be re-validated for this purpose, the SCAS items themselves would likely be highly transportable, as they are written in self-statement format. As noted above, the PRCS items tend to refer to general tendencies rather than specific responses, and would be comparatively less suitable for adaptation to the task of measuring state-specific public speaking anxiety. Should the SCAS be empirically demonstrated to be adaptable in such a fashion, it could be usefully employed as an outcome measure in future experimental research into public speaking anxiety. While past research has utilized subjective units of distress (SUDS) ratings (Woody, 1996; Woody & Rodriguez, 2000) or customized rating scales (Savitsky & Gilovich, 2003) to make group comparisons, SCAS scores could potentially serve the same function with the added benefit of the increased construct specificity that empirically-based cognitive assessment methods provide (Glass & Arnkoff, 1994). The SCAS might also prove useful as a pretest-posttest measure of treatment changes, provided its sensitivity to change can be adequately established in controlled research.

Potential for integration with speech-anxiety interventions. The unique properties of the SCAS relative to the PRCS may have additional benefits in non-research contexts where speech anxiety is a frequently encountered issue, such as clinical or educational settings. One of the strengths of the continuous response format utilized by the SCAS is that individual responses to the SCAS items can provide idiographic data about the relative prevalence of specific cognitions in an individuals' speaking experience, giving potentially important information about which cognitions contribute more to experiences of anxiety. By contrast, the dichotomous response format of the PRCS cannot provide

any information beyond whether or not the individual identifies with a particular scale item. The additional information provided by examining the profile of responses on the SCAS might be helpful in targeting educational or therapeutic interventions for speaking anxiety. For example, an individual may obtain a normatively high total score on the SCAS by endorsing that he or she 'always' experiences thoughts of "freezing up," "trembling," and "sweating" during speaking, while reporting less frequent concerns related to the other negative thoughts on the scale. From this, the communication teacher or clinician can focus special effort on helping this individual reduce body-related concerns during speaking. In an explicitly clinically-focused setting, therapists might elect to use responses to the SCAS items as the basis for an exposure hierarchy to desensitize speech-anxious clients to specific performance concerns.

A second aspect of the SCAS that may prove beneficial in applied settings is that the measure's exclusive focus on cognitions can provide a natural transition into cognitive reframing exercises, which have proven effective in reducing social anxiety (Beck, Emery, & Greenberg, 1985; Heimberg, Dodge, Hope, Kennedy, Zollo, & Becker, 1990). With regard to social anxiety treatment, cognitive reframing is a technique in cognitive-behavioral psychotherapy wherein a sufferer alters anxiety-provoking thoughts and assumptions by learning to identify and challenge them. For example, a speech-anxious person who frequently thinks "I sound stupid talking to these people" might challenge this thought by with "Most people will recognize that I'm doing the best I can, and won't hold a few slip-ups against me." Since the SCAS items, unlike the PRCS items, are written as first-person self-statements, they could easily be incorporated into exercises designed to teach reframing to speech-anxious individuals. After administering

the SCAS, a clinician or teacher might provide a speech-anxious person with basic instruction on the relationship between negative thoughts and anxiety, and follow with an exercise in which he or she generates relevant challenges to each of the negative cognitions endorsed on the SCAS. Additionally, the speech anxious individual could be coached into rehearsing thoughts in the SCAS Positive Performance Cognitions that may have been reported as being low-prevalence (e.g. Item 19; *I am doing well with the speech*) to increase confidence and reduce anxiety while speaking. An appropriately validated protocol of this type could be paired with the SCAS and standardized for use in university courses for students suffering from public speaking anxiety. Integrating assessment and intervention for public speaking anxiety-related cognitions in this fashion may help enable the creation of an empirically-validated treatment program for public speaking anxiety that can be administered by educators and other non-clinicians. Such a program might prove beneficial to individuals with mild to moderate levels of public speaking anxiety in overcoming their fears without the need for professional psychological intervention.

Future Directions

Further validation of measure properties. Although the results of the current study give a positive initial indication for the reliability and convergent validity of the SCAS, further research is necessary for the instrument to be considered truly well-validated. A clear initial concern is ensuring that the norms, distribution, validity correlations, and reliability observed in this sample are replicable in other populations. The future utility of the measure is highly dependent on its ability to retain good psychometric properties across a variety of contexts. The three-factor structure found in

the current analysis is of particular interest, since it may provide useful information about the underlying structure of public speaking anxiety and variations therein if it proves to be replicable. Re-administering the SCAS and the convergent validity measures to a larger sample with the intent of performing a confirmatory factor analysis on the data would be an important step toward meeting these goals.

Establishment of clinical norms. In a similar vein, examining the properties of the SCAS in a population consisting solely of individuals who meet DSM-IV diagnostic criteria for Social Phobia (American Psychiatric Association, 1994) would aid greatly in providing clarification about how the measure performs in clinical populations. Such data would allow for an examination of the robustness of the SCAS factor structure in specifically speech-anxious populations, as well as helping to establish empirically-based clinical norms and cutoff scores for the measure, which are highly relevant for the future use of the measure in both research and treatment settings. A secondary question of interest in such a study might be a comparison in total scores and response patterns between individuals with a diagnosis of Social Phobia, generalized type and Social Phobia, specific type for public speaking anxiety. Such data might yield valuable information about whether or not the distinction between the subtypes translates to differences in the severity or presentation of anxiety experienced specifically in public speaking situations.

External validity studies. Another critical step in validating the SCAS is establishing external validity by correlating SCAS total scores with direct measures of subject anxiety and confidence during an actual public speaking task. Ideally, such a study would administer the SCAS prior to a laboratory-controlled impromptu public

speaking task, similar to the one employed in the initial collection of the self-statements used as the basis for the SCAS items (Beck, Marin, Huber, & Rodriguez, 2005) and afterward collect participant self-ratings of anxiety and confidence experienced during the speech using a 0-100 Subjective Units of Distress scale. Such a study would serve the necessary purposes of establishing support for the predictive validity of the SCAS and providing further support for the construct validity of the measure in terms of its relationship to public speaking anxiety (Cronbach & Meehl, 1955). Administering the PRCS alongside the SCAS in such a study would provide another interesting point of comparison between the two measures with respect to predictive validity, and could potentially provide additional support for the general benefits of cognitive assessment measures.

Focus of attention clarification. Experimental research might also be conducted to obtain a more focused examination of the role of focus of attention in the SCAS factor structure. As previously discussed, one potential explanation for the failure to find an expected focus of attention effect in the factor structure of the SCAS may be due to the effect of retrospective response biases. This theory could be tested by conducting an experimental study in which participants are randomly assigned to complete the SCAS either retrospectively or immediately after a public speaking task. Conducting exploratory factor analyses on the two sets of data for the purposes of comparison would provide a clear test of whether or not proximity to the speaking experience increases the sensitivity of the SCAS to focus of attention effects. Alternatively, examining the differences in SCAS total scores and factor structures between conditions in an experimental paradigm designed to manipulate focus of attention, such as that used by

Woody (1996) or Woody and Rodriguez (2000), may provide a more conclusive test of the relationship between focus of attention during public speaking and responses to the SCAS items. Replicating the factor structure of the SCAS under varied attentional focus conditions would be a positive indicator for the robustness of the measure, and could possibly contribute to a more detailed theoretical account of how focus of attention interacts with other elements in the public speaking experience.

Possible clinical applications. Finally, the potential for integrating the SCAS into a standardized treatment protocol for public speaking anxiety is deserving of empirical study. Demonstrating the sensitivity of the SCAS in measuring changes in public speaking anxiety over time would constitute a positive initial step toward achieving this goal. This might be achieved by conducting a study in which speech anxious individuals undergo a treatment for public speaking anxiety using cognitive and behavioral methods, potentially similar to the group treatment utilized by Chambless, Tran, & Glass (1997). Administering the SCAS along with a public speaking anxiety behavioral test at pre-treatment, post-treatment, and follow-up would provide important data regarding the ability of the SCAS to respond to treatment-influenced changes in speaking anxiety. Establishing sensitivity to change would expand the range of uses for the SCAS beyond screening and detection of public speaking anxiety to potential clinical research and treatment applications. Given the empirical fashion in which the SCAS was developed, the measure may evolve into a useful tool for validating emerging psychological treatments for public speaking anxiety or to evaluate treatment progress in individuals who are receiving clinical treatment for a diagnosis of social phobia, specific type.

With appropriate further validation, the SCAS could also be integrated into traditional individual psychotherapy for Social Phobia, specific type. Cognitive and cognitive-behavioral techniques for treatment of clinically significant anxiety are in wide use and have been supported with empirical evidence (Beck, Emery, & Greenberg, 1985; Hofmann & Barlow, 2004). These treatments typically involve teaching anxious individuals to recognize and challenge their anxiety-provoking thoughts to reduce the severity of the anxiety, and exposing them repeatedly to the feared situation to reduce avoidance tendencies. Given the cognitive focus of the SCAS, a clinician beginning cognitive therapy for a severely speech-anxious individual could use the measure to engage the client in a discussion of why particular thoughts are more anxiety provoking than others during a speaking situation. After orienting the client to the therapy, the SCAS items could be incorporated into exercises designed to help the client learn to challenge the cognitions that are most relevant to his or her specific situation. For example, a client who identifies Item 16 (*The audience can tell that I am afraid*) as a frequently experienced cognition, might generate a cognitive challenge that states "most people won't be looking closely enough at me to give it much thought."

The SCAS might also prove clinically useful in encouraging the client to make the transition to the exposure tasks that are a critical component of the therapy (Hofmann & Barlow, 2004). A major issue in treatment of speaking anxiety is the difficulty of convincing anxious individuals to willingly expose themselves to speaking situations with sufficient frequency to allow for desensitization to occur (Rodebaugh & Chambless, 2004). Therefore, encouragement and reinforcement of participation in exposure exercises is an important part of clinical treatment. To this end, the facilitative cognitions

assessed in the reverse-scored SCAS items might be useful in providing speech anxious clients with positive thoughts to rehearse before entering a speaking situation. For instance, if a client reports that he or she does not often experience the thought reflected in Item 19 (*I'm doing well with the speech*) this client could be instructed to rehearse this thought and employ it during exposure tasks as a method of anxiety control. In doing so, the therapist might point out to the client that facilitative thoughts can replace or limit the amount of debilitative, anxiety-causing thoughts that the client experiences, connecting the exposure and cognitively-based components of the treatment.

Possible educational applications. In addition, since the SCAS was developed and initially validated using a general population sample, the measure might integrate well with a short-term, targeted treatment for individuals with subclinical public speaking anxiety. Given the high prevalence of speaking anxiety (Kessler, Stein, & Berglund, 1998), there is likely to be a large demand for effective relief, particularly in educational settings where public speaking is required. One of the benefits of cognitive assessment measures such as the SCAS is the greater level of integration that is possible with cognitively-based interventions (Glass & Arnkoff, 1994; Glass & Arnkoff, 1997; Glass, Merluzzi, Biever, & Larsen, 1982) due to the focus on external validity. The development and pilot testing of a standardized school-based intervention that integrates SCAS screening, psychoeducation about the role of cognitions in speaking anxiety, cognitive-reframing exercises, and speaking task exposure could lead to a method of efficiently and effectively addressing public speaking fears in this population without the need for professional psychotherapeutic intervention.

CHAPTER 5

Summary and Conclusions

The current study successfully utilized exploratory factor analysis of responses made to 35 cognitive self-statements gathered in a previous study (Beck, et al., 2005) to form the Speaking Cognitions and Attention Scale (SCAS), a 30-item measure of public speaking anxiety. Data indicates that in the current sample, the SCAS displays a 3-factor solution, reflecting items with positive, moderately negative, and extremely negative emotional content respectively. The measure also exhibits good initial psychometric properties, including excellent internal reliability and strong item-total correlations.

Convergent validity analyses provide a positive initial indication that the SCAS is a valid and specific measure of anxiety during public speaking. The SCAS correlated more strongly with a different questionnaire measure of public speaking anxiety than with two measures of general social anxiety. Additionally, the SCAS showed no mathematical relationship with a subscale measure of a construct theoretically unrelated to public speaking anxiety, providing evidence for discriminant validity. Contrary to prediction, the SCAS displayed only a small effect size of common variance with a measure of self-focused attention, indicating that SCAS responses in the current sample were not strongly influenced by attentional focus tendencies.

The results of the current study indicate that the SCAS may be a reliable and valid measure of public speaking anxiety. In comparison to other questionnaire methods of public speaking anxiety in wide use, the SCAS has been developed using empirical methods of cognitive assessment, and utilizes items adapted from self-reported cognitions of speech-anxious individuals. As such, the SCAS may be able to provide a more specific

and valid measure of public speaking anxiety than measures developed using other means. Furthermore, the SCAS may also be more adaptable to varying research and clinical contexts due to its specific focus on cognitive correlates of speaking anxiety.

These results are limited by the retrospective nature of sample responses, and further research is needed to establish the validity of the SCAS in predicting anxiety in actual public speaking tasks. More research is also needed to replicate the factor structure found in the current sample, particularly with regard to the lack of attentional focus elements in the factor structure of the presently obtained sample. Once the reliability and validity of the SCAS is more firmly established with different samples, research is needed to substantiate the measure's utility for integration with clinical and educational interventions for public speaking anxiety.

REFERENCES

Alden, L.E. & Beiling, P.J. (1998). Interpersonal consequences of the pursuit of safety. *Behaviour Research and Therapy, 36,* 53-64.

Alden, L. E., Bieling, P. J., & Wallace, S. T. (1994). Perfectionism in an interpersonal context: A self-regulation analysis of dysphoria and social anxiety. *Cognitive Therapy and Research, 18,* 297-316.

Alden, L. E., & Wallace, S. T. (1995). Social phobia and social appraisal in successful and unsuccessful social interactions. *Behaviour Research and Therapy, 5,* 497-505.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Amsel, R., & Fichten, C. S. (1990). Ratio versus frequency scores: Focus of attention and the balance between positive and negative thoughts. *Cognitive Therapy and Research, 14,* 257-277.

Arnkoff, D. B., & Glass, C. R. (1989). Cognitive assessment in social anxiety and social phobia. *Clinical Psychology Review, 9,* 61-74.

Ayres, J. (1988). Coping with speech anxiety: The power of positive thinking. *Communication Education, 37,* 289-296.

Bar-Haim, Y., Lamy, D., Pergamin, L., Bakermans-Kranenberg, M.J., van Ijzendoorn, M.H. (2007). Threat-related attentional bias in anxious and nonanxious individuals: A meta-analytic study. *Psychological Bulletin, 133,* 1-24.

Beatty, M.J. (1988). Situational and predispositional correlates of public speaking anxiety. *Communication Education, 37,* 28-39.

Beatty, M.J. & Behnke, R.R. (1991). Effects of public speaking trait anxiety and intensity of speaking task on heart rate during performance. *Human Communication Research, 18,* 147-176.

Beazley, M. B., Glass, C. R., Chambless, D. L., & Arnkoff, D. B. (2001). Cognitive self-statements in social phobia: A comparison across three types of social situations. *Cognitive Therapy and Research, 25*, 781-799.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders.* New York: International Universities Press, Inc.

Beck, A. T., & Clark, D. A. (1997). An information processing model of anxiety: Automatic and strategic processes. *Behavior Research and Therapy, 35*, 49-58.

Beck, A. T., Emery, G., & Greenberg, R. (1985). *Anxiety disorders and phobias: A cognitive perspective.* New York: Basic Books.

Beck, R.D., Huber, J.L., Marin, J.W., & Rodriguez, B.F. (2005, August). *Self-focused attention in public speaking performance evaluation*. Poster session presented at the meeting of the American Psychological Association, Washington, DC.

Beck, R.D. & Rodriguez, B.F. (2006). [Adapted cognitive-self statements for use in assessing public speaking anxiety]. Unpublished raw data.

Birk, L. (2004). Pharmacotherapy for performance anxiety disorders: Occasionally useful but typically contraindicated. *Journal of Clinical Psychology, 60*, 867-879.

Bitran, S. & Barlow, D. H. (2004). Etiology and treatment of social anxiety: A commentary. *Journal of Clinical Psychology, 60,* 881-886.

Boohar, R.K. & Seiler, W.J. (1982). Speech communication anxiety: An impediment to academic achievement in the university classroom. *Journal of Classroom Interaction, 18,* 23-27.

Booth-Butterfield, M. (1989). The interpretation of classroom performance feedback: An attributional approach. *Communication Education, 38,* 119-131.

Bruch, M. A., Mattia, J. I., Heimberg, R. G., & Holt, C. S. (1993). Cognitive specificity in social anxiety and depression: Supporting evidence and qualifications due to affective confounding. *Cognitive Therapy and Research, 17,* 1-21.

Burgoon, J.K. & LePoire, B.A. (1993). Effect of communication expectancies, actual communication, and expectancy disconfirmation on evaluations of communicators and their communication behavior. *Human Communication Research, 20,* 67-96.

Cacioppo, J. T., Glass, C. R., & Merluzzi, T. V. (1979). Self-statements and self-evaluations: A cognitive-response analysis of heterosocial anxiety. *Cognitive Therapy and Research, 3,* 249-262.

Cacioppo, J. T., von Hippel, W., & Ernst, J. M. (1997). Mapping cognitive structures and processes through verbal content: The thought-listing technique. *Journal of Consulting and Clinical Psychology, 65,* 928-940.

Carver, C. S. (2006). Approach, avoidance, and the self-regulation of affect and action. *Motivation and Emotion, 30,* 105-110.

Carver, C. S. (2004). Negative affects deriving from the behavioral approach system. *Emotion, 4,* 3-22.

Carver, C. S., & Scheier, M. F. (1981). *Attention and self-regulation: A control-theory approach to human behavior.* New York: Springer-Verlag.

Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior.* Cambridge: Cambridge University Press.

Carver, C. S., Lawrence, J. W., & Scheier, M. F. (1999). Self-discrepancies and affect: Incorporating the role of feared selves. *Personality and Social Psychology Bulletin, 25,* 783-792.

Chambless, D. L., Tran, G. Q., & Glass, C. R. (1997). Predictors of response to cognitive-behavioral group therapy for social phobia. *Journal of Anxiety Disorders, 11*, 221-240.

Cho, Y., Smits, J.A.J., & Telch, M.J. (2004). The Speech Anxiety Thoughts inventory: Scale development and preliminary psychometric data. *Behaviour Research and Therapy, 42,* 13-25.

Clark, D. A. (1988). The validity of measures of cognitions: A review of the literature. *Cognitive Therapy and Research, 12*, 1-20.

Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. G. Heimberg, M. R. Leibowitz, D. A. Hope, & F. R. Schneier, *Social phobia: Diagnosis, assessment, and treatment* (pp. 69-93). New York: The Guilford Press.

Clark, L.A. & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7,* 309-319.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Cronbach, L.J. & Meehl, P.E. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52,* 281-302.

Daly, J.A. (1978). The assessment of social-communicative anxiety via self-reports: A comparison of measures. *Communication Monographs, 45,* 204-218.

Daly, J.A., Vangelisti, A.L, & Weber, D.J. (1995). Speech anxiety affects how people prepare speeches: A protocol analysis of the preparation processes of speakers. *Communication Monographs, 62,* 383-397.

Derogatis, L. R. (1975). *The affects balance scale.* Baltimore: Clinical Psychometric Research.

Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Counseling and Clinical Psychology, 43,* 522-527.

Gilkinson, H. (1942). Social fears as reported by students in college speech classes. *Speech Monographs, 9,* 131-160.

Gilovich, T., Savitsky, K., & Medvec, V. H. (1998). The illusion of transparency: Biased assessments of others' ability to read one's emotional states. *Journal of Personality and Social Psychology, 75*, 332-346.

Glass, C. R., & Arnkoff, D. B. (1997). Questionnaire methods of cognitive self-statement assessment. *Journal of Consulting and Clinical Psychology, 65*, 911-927.

Glass, C. R., & Arnkoff, D. B. (1994). Validity issues in self-statement measures of social phobia and social anxiety. *Behaviour Research and Therapy, 32*, 255-267.

Glass, C. R., & Furlong, M. (1990). Cognitive assessment of social anxiety: Affective and behavioral correlates. *Cognitive Therapy and Research, 14*, 365-384.

Glass, C. R., Merluzzi, T. V., Biever, J. L., & Larsen, K. H. (1982). Cognitive assessment of social anxiety: Development and validation of a self-statement questionnaire. *Cognitive Therapy and Research, 6*, 37-55.

Greene, J.O. & Sparks, G.G. (1983). Explication and test of a cognitive model of communication apprehension: A new look at an old construct. *Human Communication Research, 9,* 349-366.

Harrell, T. H., Chambless, D. L., & Calhoun, J. F. (1981). Correlational relationships between self-statements and affective states. *Cognitive Therapy and Research, 5*, 159-173.

Hayton, J.C., Allen, D.G., & Scarpello, V. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods, 7,* 191-205.

Heimberg, R. G. (1994). Cognitive assessment strategies and the measurement of outcome of treatment for social phobia. *Behaviour Research and Therapy, 32,* 269-280.

Heimberg, R. G., Dodge, C. S., Hope, D. A., Kennedy, C. R., Zollo, L. J., & Becker, R. E. (1990). Cognitive behavioral group treatment for social phobia: Comparison with a credible placebo control. *Cognitive Therapy and Research, 14*, 1-25.

Heimberg, R. G., Salzman, D. G., Holt, C. S., & Blendell, K. A. (1993). Cognitive-behavioral group treatment for social phobia: Effectiveness at five-year followup. *Cognitive Therapy and Research, 17*, 325-339.

Hofmann, S.G. & Barlow, D.M. (2004). Social phobia (social anxiety disorder). In D. M. Barlow (Ed.) *Anxiety and its disorders, second edition: The nature and treatment of anxiety and panic.* (pp. 454-476). New York: Guilford.

Hofmann, S.G. & DiBartolo, P.M. (2000). An instrument to assess self-statements during public speaking: Scale development and preliminary psychometric properties. *Behavior Therapy, 31,* 499-515.

Hope, D. A., Rapee, R. M., Heimberg, R. G., & Dombeck, M. J. (1990). Representations of the self in social phobia: Vulnerability to social threat. *Cognitive Therapy and Research, 14,* 177-189.

Ingram, R. E., & Kendall, P. C. (1987). The cognitive side of anxiety. *Cognitive Therapy and Research, 11*, 523-539.

Kessler, R. C., Stein, M. B., & Berglund, P. (1998). Social phobia subtypes in the National Comorbidity Survey. *American Journal of Psychiatry, 155*, 613-619.

Kline, P. (1986). *A handbook of test construction: Introduction to psychometric design*. New York: Methuen.

Kocovski, N.L. & Endler, N.S. (2000). Social anxiety, self-regulation, and fear of negative evaluation. *European Journal of Personality, 14*, 347-358.

Leary, M.R. (1991) Social anxiety, shyness, and related constructs. In J.P. Robinson, P.R. Shaver, & L.S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 161-194). San Diego: Academic Press.

Mahone, E. M., Bruch, M. A., & Heimberg, R. G. (1993). Focus of attention and social anxiety: The role of negative self-thoughts and perceived positive attributes of the other. *Cognitive Therapy and Research, 17*, 209-224.

McCroskey, J.C. (1977). Oral communication apprehension: A summary of recent theory and research. *Human Communication Research, 4,* 78-93.

McCroskey, J.C. (1977). Classroom consequences of communication apprehension. *Communication Apprehension, 26,* 27-33.

Melchior, L. A., & Cheek, J. M. (1990). Shyness and anxious self-preoccupation during a social interaction. *Journal of Social Behavior and Personality, 5*, 117-130.

Monfries, M.M. & Kafer, N.F. (1994). Private self-consciousness and fear of negative evaluation. *The Journal of Psychology, 128,* 447-454.

Mor, N., & Winquist, J. (2002). Self-focused attention and negative affect: A meta-analysis. *Psychological Bulletin, 128,* 638-662.

Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric Theory* (3rd ed.). New York: McGraw- Hill.

Paul, G.L. (1966). Insight versus desensitization in psychotherapy: An experiment in anxiety reduction. Palo Alto, CA: Stanford University Press.

Phillips, G.C., Jones, G.E., Rieger, E.J., & Snell, J.B. (1997). Normative data for the Personal Report of Confidence as a Speaker. *Journal of Anxiety Disorders, 11,* 215-220.

Pilkonis, P. A. (1977). Shyness, public and private, and its relationship to other measures of social behavior. *Journal of Personality, 45,* 585-595.

Pineles, S.L. & Mineka, S. (2005). Attentional biases to internal and external sources of potential threat in social anxiety. *Journal of Abnormal Psychology, 114,* 314-318.

Pollard, C., & Henderson, J. (1988). Four types of social phobia in a community sample. *Journal of Nervous and Mental Disease, 176,* 440-445.

Rapee, R. M., & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behaviour Research and Therapy,* 741-756.

Rapee, R. M., & Lim, L. (1992). Discrepancy between self- and observer ratings of performance in social phobia. *Journal of Abnormal Psychology, 101,* 728-731.

Rodebaugh, T. L., & Chambless, D. L. (2004). Cognitive therapy for performance anxiety. *Journal of Clinical Psychology, 60,* 809-820.

Rodebaugh, T. L., & Rapee, R. M. (2005). Those who think they look worst respond best: Self-observer discrepancy predicts response to video feedback following a speech task. *Cognitive Therapy and Research, 29,* 705-715.

Savitsky, K., & Gilovich, T. (2003). The illusion of transparency and the alleviation of speech anxiety. *Journal of Experimental Social Psychology, 39,* 618-625.

Scheier, M. F., & Carver, C. S. (1983). Self-directed attention and the comparison of self with standards. *Journal of Experimental Social Psychology, 19,* 205-222.

Schwartz, R.M. & Garamoni, G.L. (1986). A structural model of positive and negative states of mind: Asymmetry in the internal dialogue. In P.C. Kendall (Ed.), *Advances in cognitive-behavioral research and therapy.* (Vol. 5, pp. 1-62). New York: Academic Press.

Stein, M. B., Walker, J. R., & Forde, D. R. (1996). Public-speaking fears in a community sample. *Archives of General Psychiatry, 53,* 169-174.

Stopa, L., & Clark, D. M. (1993). Cognitive processes in social phobia. *Behaviour Research and Therapy, 31,* 255-267.

Streiner, D.L. (2003). Starting at the beginning: An introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment, 80,* 99-103.

Tabachnick, B.G. & Fidell, L.S. (2001). *Using multivariate statistics* (4th ed.). Boston: Allyn and Bacon.

Tarico, V. S., Van Velzen, D. R., & Altmaier, E. M. (1986). Comparison of thought-listing rating methods. *Journal of Counseling Psychology, 33,* 81-83.

Turner, R. G., Scheier, M.F., Carver, C. S., & Ickes, W. (1978). Correlates of self-consciousness. *Journal of Personality Assessment, 42,* 285-289.

Voncken, M.J., Alden, L.E., & Bögels, S.M. (2006). Hiding anxiety versus acknowledgment of anxiety in social interaction: Relationship with social anxiety. *Behaviour Research and Therapy, 44,* 1673-1679.

Wald, S.M. (2005). *Framing social information and public speaking anxiety*. Unpublished master's thesis, Southern Illinois University Carbondale.

Wallace, S. T., & Alden, L. E. (1991). A comparison of social standards and percieved ability in anxious and nonanxious men. *Cognitive Therapy and Research, 15*, 237-254.

Watson, D., & Friend, R. (1969). Measurement of social-evaluative anxiety. *Journal of Consulting and Clinical Psychology, 33*, 448-457.

Winton, E. C., Clark, D. M., & Edelmann, R. J. (1995). Social anxiety, fear of negative evaluation, and the detection of negative emotion in others. *Behaviour Research and Therapy, 33,* 193-196.

Wolpe, J. (1969). *The practice of behavior therapy*. New York: Pergamon.

Woody, S. R. (1996). Effects of focus of attention of anxiety levels and social performance of individuals with social phobia. *Journal of Abnormal Psychology, 105*, 61-69.

Woody, S.R., Chambless, D.L., & Glass, C.R. (1997). Self-focused attention in the treatment of social phobia. *Behaviour Research and Therapy, 35,* 117-129.

Woody, S. R., & Rodriguez, B. F. (2000). Self focused attention and social anxiety. *Cognitive Therapy and Research, 24*.

APPENDICES

Appendix A

Final 30- Item Speaking Cognitions and Attention Scale

This questionnaire looks at how people respond to giving a speech or presentation in public. Before you respond to the items in the questionnaire, take a minute and think back to the last several times you gave a speech in public. This could be a classroom presentation, at a formal occasion, or any other situation that involves you speaking before an audience. How did you feel as you were about to give the speech? What sort of things were you thinking about? While you were speaking, how did you feel during the speech? What thoughts were going through your head? Now, please respond to the following statements by indicating how well they describe your experiences when speaking in public.

1. I feel anxious giving this speech.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

2. I look stupid to the audience.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

3. I am starting to feel uneasy.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

4. The audience sees that I am calm.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

5. I am scared of this entire situation.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

6. I think I'm doing well.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

7. They can see that I am anxious.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

8. My body feels really hot.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

9. I sound stupid talking to these people.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

10. I look confident standing up here.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

11. I am trembling standing up here.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

12. The audience can tell that I am afraid.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

13. They think I am doing well.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

14. My voice sounds timid.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

15. I am doing well with the speech.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

16. This speech is making me sweat.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

17. I am panicking; I want to get out of here.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

18. I look comfortable giving this speech.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

19. I hope I don’t look stupid in front of these people.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

20. I’m going to freeze up.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

21. I am comfortable giving this speech.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

22. They can see that I am uncomfortable.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

23. I am calm while standing in front of this audience.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

24. The speech I am giving is horrible.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

25. I look stiff to the audience.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

26. I am confident with my performance.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

27. This isn't so bad.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

28. I am uncomfortable giving this speech.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

29. I look confident to them.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

30. The audience sees that I am doing a bad job.

0	1	2	3	4
Never	Not in most cases, but occasionally	About half the time	More often than not	Always

Appendix B

Prospective Items for Speaking Cognitions and Attention Scale

This questionnaire looks at how people respond to giving a speech or presentation in public. Before you respond to the items in the questionnaire, take a minute and think back to the last several times you gave a speech in public. This could be a classroom presentation, at a formal occasion, or any other situation that involves you speaking before an audience. How did you feel as you were about to give the speech? What sort of things were you thinking about? While you were speaking, how did you feel during the speech? What thoughts were going through your head? Now, please respond to the following statements by indicating how well they describe your experiences when speaking in public.

1. I feel anxious giving this speech.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

2. I look stupid to the audience.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

3. I am starting to feel uneasy.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

4. My eyes are wandering all over the room.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

5. The audience sees that I am calm.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

6. I am scared of this entire situation.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

7. I look stiff as a board standing here.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

8. I think I'm doing well.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

9. I hope I don't stutter while speaking.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

10. They can see that I am anxious.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

11. My body feels really hot.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

12. I sound stupid talking to these people.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

13. I look confident standing up here.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

14. They think I am talking too fast.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

15. I am trembling standing up here.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

16. The audience can tell that I am afraid.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

17. They think I am doing well.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

18. My voice sounds timid.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

19. I am doing well with the speech.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

20. This speech is making me sweat.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

21. I am panicking; I want to get out of here.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

22. I look comfortable giving this speech.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

23. I hope I don't look stupid in front of these people.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

24. I'm going to freeze up.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

25. I am comfortable giving this speech.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

26. They can see that I am uncomfortable.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

27. I am calm while standing in front of this audience.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

28. The speech I am giving is horrible.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

29. I look stiff to the audience.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

30. I am confident with my performance.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

31. I keep fidgeting with my hands.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

32. This isn't so bad.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

33. I am uncomfortable giving this speech.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

34. I look confident to them.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

35. The audience sees that I am doing a bad job.

0 ---------- 1 ---------- 2 ---------- 3 ---------- 4

Never | Not in most cases, but occasionally | About half the time | More often than not | Always

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